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GROWING MINDS

GROWING MINDS

AN INTRODUCTION TO
EDUCATIONAL PSYCHOLOGY

By

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PREFACE

THE following chapters deal with the mental growth of the boys and girls whom we know in daily life. We see them becoming more effective and independent members of the world in which they live. There are more and more people and things in which they take an interest, and the parts they play in the life of the world around them grow more purposeful and effective. We shall begin by looking at their growth mainly from this point of view. But we see them at the same time developing their mental powers. They can think and feel and act more consistently and intelligently and become more responsible for their various activities. This second aspect of their growth is the chief subject of the latter part of the book.

In a brief introduction to a wide subject I have confined myself almost entirely to points of special interest to those responsible for the education of boys and girls at home and at school. A short list of books has been appended in the hope that readers will test my statements, not only by their practical experience, but also by further study. The list includes only a few of the books which can be profitably consulted.

One difficulty which faces any writer about boys and girls is that we have no suitable term that in-

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cludes them both. To speak⁰ of them as children implies an attitude of disrespect alien to the spirit of this book. I have, therefore, cut the Gordian knot by generally talking about boys, on the understanding that when I speak of boys I usually mean boys and girls, and that a boy's sisters are not less important than he is himself. Readers whose experience is different from my own will, however, probably find evidence of the fact that nearly all my teaching has been done in Public and Secondary schools for boys.

The book owes much to the suggestions of the following friends who have kindly read it in typescript: Professors J. F. Duff, Frances Vaughan and C. Williams; Mr. Idwal Jones, Miss A. K. Pritchard and Miss M. Steele Smith. My wife also has given me invaluable help; but an author is responsible for his own deficiencies.

H. BOMPAS SMITH.

PART I

THE GROWTH OF THE BOY'S WORLD

CHAPTER I

THE BOY AND HIS ENVIRONMENT

A DISTINGUISHED American psychologist startled his readers by claiming that he could take any normal child, and by completely controlling his environment could make him whatever kind of child he liked. He held that a boy lives and grows by responding to the influences of his surroundings, and therefore these surroundings determine his mental and physical development.¹

Few, if any, teachers would accept this view in so unqualified a form, but some strict disciplinarians are in general sympathy with it. They tell a boy exactly what to do, assuming that if he obeys he will develop as they desire. Other teachers, however, hold that a boy can originate as well as respond, and should make changes in the world as well as adapt himself to it. They therefore maintain that a boy grows chiefly by exercising initiative and being freely active. Thus Sir Percy Nunn tells us that "nothing good enters into the human world except in and through the free activities of individual men and women, and educational practice must be shaped to accord with that truth."² Enthusiastic advocates

¹ See J. B. Watson, *Psychology from the Standpoint of a Behaviorist*.

² *Education: Its Data and First Principles*, p. 5.

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of freedom in the schools, less wise than Sir Percy Nunn, sometimes go so far as to denounce all compulsion as interfering with a boy's natural growth. They would have the minimum of discipline and leave a boy as far as possible free to do what he wants in his own way.

The mistake of ardent advocates of either view is that they tend to look upon the boy and his environment as opposed to one another. The upholders of strict discipline, in practice if not in theory, assume that civilised life is a kind of Procrustean bed which a boy must be made to fit even at the cost of stretching his limbs or chopping off his feet. The prophets of freedom, on the other hand, seem to think that a boy acts freely only when he is uninfluenced by those about him. As a matter of fact, a boy's environment is in principle neither a Procrustean bed nor a hermit's cell, but a wider life which he shares and as he grows older makes more and more his own. By responding to the claims of the world around him and accepting the discipline which it imposes he brings order into his own life, while by sharing the thoughts and feelings and efforts of other people he broadens his outlook and increases his power of achieving his wider purposes.

From time to time we all have experience of the way in which boys and girls, like older people, draw strength and inspiration by sharing the life of others and of the world at large. When we are teaching or playing in a team or discussing an interesting question with our friends, we find ourselves absorbed in a wider life than our own, and are thereby lifted above our separate personal selves by our fellowship

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with others. We find ourselves thinking and doing and saying things which we could never have done by our unaided strength and wisdom. In such experiences of our higher moments we become aware of a process which is characteristic of all human life and which it is the purpose of education to render more effective.

This conception of the boy's relation to the world in which he lives may seem at variance with the obvious fact that we are often at loggerheads with our environment. In an ideal world we might always be in harmony with it, but the world as we know it is so imperfect that we cannot and ought not to share its life. In reply to this objection we admit and even emphasise the facts on which it is based and yet draw a different conclusion from them. The world has much that is evil in it, but the evil is there in order that it may be overcome, and we share the world's true life by taking part in the struggle to overcome it. We do so, not by standing aloof, but by entering into the battle as members of the army fighting for what is right against the forces of a common foe. Suppose you are taking a lesson which is going wrong and you and the boys are at cross purposes. You nevertheless can live rightly in the situation, but only by identifying yourself with it. For its true value lies in the opportunity it gives you of making the lesson go better, and you can do so, not by disregarding the boys or treating them merely as antagonists, but, as we say, by getting hold of them. If you have to use forcible measures, they are only a means of removing obstacles to arriving at a common basis upon which you can work together. If you

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establish this basis your success will be due to the stimulus and inspiration which the whole situation gave you.. Moreover, you would have failed unless the boys had responded to your efforts, which were thereby supported and intensified. This example illustrates the way in which the very imperfection of our world makes life a higher and more adventurous experience than would be possible to us, imperfect as we are, in a world that was wholly peaceable and good.¹

A boy shares the life of his world on what we may call different levels. On the lowest level his world is one of material things constantly changing according to fixed natural laws. The boy himself has a material body in which such changes are taking place. These changes lead on to life at a higher level by making it possible for plants and animals and men to live. The boy shares in the processes which maintain his bodily life when, for example, he breathes and eats and is warm or cold. But his bodily life in turn makes possible his higher mental life with which it is inseparably connected. He can see with his eyes and understand with his brain. He therefore becomes in a fuller sense a member of his world by knowing that he lives in it. Moreover, in his world are other people, who like himself can feel and know and strive, and he can in some measure share their thoughts and feelings and live in fellowship with them. By so doing he finds that even material things minister to his mental life as

¹ See the description of Chautauqua in W. James, *Talks to Teachers*, pp. 268 f., and for the general principles involved B. Bosanquet, *The Principle of Individuality and Value*, Chap. I.

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well as to that of his body? A mountain is not merely a great mass of stone which it gives him healthy exercise to climb, but also a beautiful sight he can enjoy and a means of satisfying his longing for adventure. Finally, he comes to feel that his world is not simply one of persons and things as they now are, but of persons and things that ought to be made better. In the end he shares the life of his world on the highest level when he takes part in the struggle to make things what they ought to be.

A boy inevitably shares the life of his world in these different ways in everything he does. For example, when he is playing football his body responds to the air and light and the solid ground beneath his feet and his other material surroundings. He lives, that is, as a member of the material world. But he responds also with his mind. He can see the things about him, understand what is going on, feel pleased or disappointed, and try to pass or kick the ball. He thus lives in a world of things to be known and valued, and of persons like himself who know and value them. Just as the boy himself has a body and a mind, so the game of football has a kind of body in the ground on which it is played, the ball and goal-posts, and the bodies of the players. But it has also a mind or spirit shared by the boys who play, by virtue of the purposes which inspire them and the spirit in which they play. As the boy plays he is thus both a part of the game's body, one moving object among other material objects, and he also enters into the spirit and purpose of the game and so shares its mind. He does both these things at once. His body and his mind depend throughout upon each

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other, and their activities are connected in innumerable ways. The light from the ball affects his bodily eyes, but he can see the ball as a ball only because his mind understands what he sees. When the ball is passed to him his mind tells him what to do, but his body must carry out his purpose. In the following chapters we shall speak primarily of the growth of the boy's mind, but we must never forget this close connection between mind and body and that his healthy growth depends hardly less upon the due development of his body than upon the progress of his mind.

CHAPTER II

THE BOY'S LIFE IN HIS WORLD

A BOY shares the life of his world by living at a particular time in a particular situation. He does so, for instance, when he is playing football or taking part in a lesson. He takes the first step towards sharing the life of the situation on the mental level by becoming aware that it has some value for him, that is by feeling an interest in it. The Latin word *interest*, according to the dictionary, means "it makes a difference, interests, concerns, imports," and when we say that the boy feels an interest in a situation or object we mean that he is aware that it *interests* him in the dictionary sense.

We can see that a boy's interest in a situation inspires his whole response to it if we watch him in a class-room listening to the master. He listens because he feels that the master's words concern him or have some value for him. This value is positive if he is satisfied by what the master says, or negative if the master's statements seem to him foolish or disagreeable. But in either case he does not remain indifferent and gives expression to his interest by listening to what the master says.

If we look more closely at the situation in which the boy feels an interest, we see that it is in the first place an actual situation in the real world.

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The boy feels the interest he does because he is conscious of being in an actual class-room in which things are really taking place. If he had been thinking about an imaginary lesson his interest would have been different. But he responds to the situation as real only by his general attitude. He does not respond to all the details it includes. If he is attending to the lesson, he hears what the master says, but does not see what his neighbour, Jones, is doing. If, however, he is watching Jones draw a comic picture, the master's words play no part in the situation as he knows it. We must therefore draw a sharp distinction between the real situation and the situation in which the boy actually feels an interest. This latter situation we shall call his *personal* situation. It is the real situation seen through the boy's eyes very incompletely and with more or less distortion. He sees only a small part of the real situation and he sees that part in a special perspective which perhaps does scant justice to the true meaning of the whole. It is to his personal situation that the boy responds by feeling an interest in it and so beginning to share its life.

To take a particular example, the boy's interest in the lesson led him to be active in sharing its life as fully as he could, and this in three connected ways. In the first place it made him live, and feel that he was living, as a member of the situation. He was in the class-room with the other boys and the master, and felt what it was like to be a member of the class, just as the boy playing football felt what it was like to be an actual player. He identified

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himself with the situation by living it from within and not merely looking at it from outside as an external observer.

In this particular case he lived the situation from within in a more intimate way. As he listened to the master's words he shared to some extent the master's thoughts. Assuming that the other boys were also listening, he knew or took it for granted that they were feeling the same interest as himself in understanding what the master said, and his own activity in listening was thereby encouraged. Further, when he and the other boys made contributions to the lesson, they were co-operating in a common effort to achieve a common end, and each boy's contribution owed its chief value to the part it played in this common endeavour. The boy's interest in the lesson therefore was quickened and widened by being a common interest shared by the other boys and the master and transformed by being so shared. "Real teaching," Prof. Campagnac has said, ". . . is a building up, partly with the skill of well-directed effort, but partly also without premeditation, and as the free and generous gift of heaven, of a common experience shared by teacher and pupils, a thing neither his nor theirs, but a fresh impulse of life which comes and enriches both."¹ The way in which a boy lives a situation from within by sharing the common interests of its other members could hardly be better described.

But, secondly, while the boy lived as a member of the class he was still his individual self with thoughts and feelings and a point of view which,

¹ *A Theory of Education*, p. 128.

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Though influenced by his surroundings, remained characteristically his own. He therefore not only lived the situation from within, but also knew it as one outside himself. The master was another person speaking, and he had to understand what was being said. If the class was excited and he was not carried away by the other boys' excitement he could judge like an outside spectator how far their feelings were reasonable. In this way he looked at the situation from outside as well as lived it from within. This more independent attitude differed from that of absorbing himself in the situation, but each made the other possible. The boy could not understand what the master said unless he shared his thoughts, but he could do so only because he heard the master's words as those of a person outside himself. On the other hand, the mere sound of the words would have meant nothing to him unless he had shared the thoughts which they expressed. The more fully the boy shared the life of his environment the more was his own personal life enhanced, and vice versa.

Thirdly, the boy's response to the situation did not end in simply living it from within and at the same time knowing it from outside. As a member of the class he felt that he must do his part in making the lesson successful, and as he looked at the situation from outside he saw how this could, in his view, be done. His interest in the situation therefore inspired him to be active in changing it for the better. He not only listened to the master, but tried to make some useful contributions of his own. This effort to make the lesson satisfying

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was the inevitable outcome and expression of his interest in it. For whenever we feel an interest in a situation, our interest is not simply in the situation as it is, but also in the situation as it may become. A situation never stands still. It is a "chunk of events" in which something is taking place. The vital question is therefore whether the situation is becoming better or worse, and our interest is in its becoming better. We may put the same point in another way by saying that a situation has both an actual and a possible value, and that our interest is in making the possible value actual. A boy sees a chance of kicking a goal. That is the possible value of the situation for him. His interest is in actually scoring, that is in making the possible value of the situation an actual value.

Speaking generally, a boy is active in these three ways at the same time, but more active in one direction than in the other two. For example, we shall see that a child tends to live his world mainly from within, whereas when he grows to be a boy he is specially bent on actively doing things and so changing his world for the better.

From the time a boy wakes in the morning until he falls asleep at night he lives in a series of situations which are at once real and personal. Sometimes they are definitely divided from each other, but more often they dissolve each into the next, like patterns in a kaleidoscope. These situations are all connected with each other because they are situations in a world of real persons and objects and events. However imperfectly the boy appreciates the full meaning and value of a situation, he is at any

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rate vaguely aware of it as an episode in a wider scheme of things which is ultimately the universe as a whole. Thus a lesson is an incident in the school's life, but the school itself is one institution among many in the town, with its own past and future. The town is one place in his native country, and so on almost indefinitely. The background of the situation thus spreads outwards and backwards and onwards, growing less distinct as it extends into the immeasurable distance. All situations have this common background which makes them part of one real world. By living in any situation the boy therefore lives in the real world at a particular point, and the more he realises the immediate background of a situation and its connection with other situations the better will he grasp its meaning and its value. Thus the boy feels a keen interest in a lesson when he appreciates its bearing upon what he does at home or sees going on in the world around him. Or again, he will work harder if he knows that doing so will help him to achieve some further purpose. We shall see that one side of a boy's mental growth is his increasing ability to appreciate situations with wide backgrounds.

But further, all a boy's situations are personal situations in his own continuous life. They have therefore a personal background as well as a background in the real world. The boy comes to a lesson familiar with the language spoken in it and knowing a good deal about its subject-matter. Also the class-room, the master and the other boys are known to him from the past. The lesson

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thus takes its place in a system¹ of things in which he has felt an interest on previous occasions, and can therefore do so again. This system of things in which he is ready and able to feel an interest, we shall call his personal world. It is the world in which he actually lives in a succession of situations which owe their meaning and value largely to the parts they play in his personal world as a whole. As his mind develops he lives in situations with wider backgrounds and therefore more definitely connected with each other. He therefore comes to live more and more in a coherent, orderly world.

The boy's personal world, as it gradually develops in the course of his experience, reproduces in a fragmentary and imperfect way the world as it really is. His experience is limited to an infinitesimal fraction of the real world, and even this fraction he knows and values very imperfectly. Nevertheless, his personal world reproduces in imperfect outline the character of the real world. The truth as he knows it is very far from the whole truth, but it is true so far as it goes. A boy's mental growth is measured by the advance he makes in so developing his personal world that it becomes within its limits a true reproduction of the world as it really is.

CHAPTER III

THE CHILD'S WORLD

WHEN a child makes his first appearance in the world he gives vent to his feeling of discomfort by uttering a cry. He finds the situation painful without knowing what the situation is. He lives it from within before he looks at it from outside. As he grows older, he learns to recognise people and things about him and to feel an interest in them as members of the real world, but throughout his childhood he continues to respond to situations mainly by feeling what it is like to live in them and by changing them if he can to meet his needs. In this way he habitually assumes an attitude towards his world which we older people adopt only on particular occasions, as, for example, when we do not look at the details of a landscape, but simply enjoy the pleasant impression it makes upon us, or feel disturbed by a "threatening" thundercloud of which we are only vaguely aware.

Companionship with a young child soon shows us that the people and things and events in the child's world excite his interest, not as objects in an external scheme of things, but because they stir his feelings. They give him pleasure or pain, arouse his wondering admiration or his contemptuous dislike. He loves or hates them for the effects

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they produce upon himself. His world is, therefore, a world of friends and foes and of wonderful or disastrous happenings, rather than a comparatively colourless world of objective facts. A child is entranced by a new toy and almost unbearably distressed when his hopes are disappointed. "I must have it, I must, I must," cried a boy of three when the post failed to bring the parcel he expected. In the same way, there are things he very much wants to do because they give him pleasure, while he can hardly be induced to do things which displease him. For the same reason he is very tender-hearted, and an unkind word or act may wound him more deeply than his elders realise. Even the common sights and sounds of daily life appeal to his feelings far more vividly than they do to the feelings of older people. He will look long and rapturously at a daisy, handling it as a fragile treasure, until he gets tired of it and disdainfully throws it away. "Recent research has shown that in young children, the primitive senses afford pleasures which are far more intense than those experienced by adults."¹ So Wordsworth speaks of the dreamlike vividness and splendour which invest objects of sight in childhood.²

One remarkable result of a child's attitude towards his world is that he tends to see and think things not as they really are, but as they would be if his feelings were the guide. Whatever appeals

¹ *Report on Nursery Schools*, p. 77.

² Introduction to the *Ode on Intimations of Immortality*. See also his *Prelude*, Book I. Compare the fine passages in R. Bridges, *The Testament of Beauty*, Book IV, ll. 39 f. and ll. 1314 f.

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strongly to his feelings or his wishes, he regards as real and important without asking whether it is so in actual fact. Jack and his beanstalk are as real as the boy next door and the cabbages in the garden. Giants and fairies are real to him simply because they are so wonderful. On the other hand, any object to which he feels indifferent does not come into his personal world at all. Thus it has been found that young children do not see pieces of furniture which they themselves never use, or houses which they and their friends have never entered. Further, a child's feelings and wishes tend to make him change an actual object into one more in accordance with his feelings and desires. When a child nurses a doll, the doll is essentially something that can be hugged and loved. It is therefore a baby like his tiny brother. There is no question of pretending. Doll and brother rouse the same feelings and are therefore fundamentally akin. In much the same way, when he rides on a chair, the chair for the time being is actually a horse. The little girl who told her mother she had seen an elephant, when in fact she had met a very large dog, actually saw the dog as an elephant. A child may even go a step farther, and see what is not there because he expects to see it and does not want to be disappointed. On one occasion a teacher was showing a class of four- and five-year-olds a picture of a farmyard and asked a boy to tell her what he saw. The boy said that he saw a horse, although there was no horse in the picture. When asked to come up and point it out he naturally failed to find it, but said quite seriously, "It must

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have gone into the stable." Many children have been punished for lying when in fact they had said only what they believed to be true.

Because a child tends to see and think of things under the influence of the feelings and expectations they arouse, he draws no definite line between animals and inanimate things. Anything that moves appeals to him as alive. Thus the wind comes and puffs the leaves along. "Mother," said a girl of three, "my hoop is clever. It knows where I want it to go." So again, a boy of four asked whether the engine did not get tired when it was pulling a long train. Even more persistent is a child's belief that birds and animals are like human beings. A boy of five, for example, could not be persuaded that his canary could not understand him when he spoke to it. This tendency to personify things and animals naturally declines as a boy grows older, but often shows itself until he is six or seven. When Bubi Scupin¹ was two years old he very often spoke of motionless material things as if they were alive, but ceased to do so in his fifth year. On the other hand, he spoke of moving things, including his own body, as alive in about a third of his statements until he was five, and he personified plants and animals in four cases out of five during his sixth year. We all know that at a much later age, boys and girls who are in trouble and are therefore thrown back upon their earlier ways of thinking and feeling, may console themselves by telling their woes to some beloved

¹ A German boy whose parents kept a careful record of what he said and did.

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dog or cat, apparently assuming that they will be understood. They then act in accordance with a tendency shared even by grown-up people experiencing great fatigue or intense emotion, to ease the strain of self-control by relapsing into the simpler life of childhood. In moments of excitement a boy may do the most childish things and work off his excitement in doing them.¹ Teachers ought to remember that we all find relief in being children and even fools at times.

A child's tendency to respond to a situation chiefly by feeling strongly about it often leads him to concentrate on what seems to him the main point, and to disregard all else. His attitude is that of a man who acts in a moment of excitement or in a fit of anger, and is blind to vital features of a situation of which he sees only one side. But in a child this attitude is normal and not confined to occasions of emotional stress. Children therefore often form a general idea of an object they see, and assume that their first impression is right without looking any farther. This tendency is illustrated by a series of experiments in which children were shown pictures of faces in which some feature, such as mouth or nose or eyes, was left a blank, and were asked to name the missing feature. It was found that at the age of four very few, and at five only about a third, of the children could say what feature was missing. Of the six-year-olds about two thirds answered rightly, but there were some

¹ Psycho-analysts hold that this tendency to revert to a simpler level of life influences us in many unsuspected ways. See e.g. E. Jones, *Papers on Psycho-analysis*, pp. 5 and 156.

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failures at all ages below ten.¹ These experiments show that the children looked at the picture as that of a face without noticing the details and that they vaguely saw a non-existent mouth or nose because they expected it to be there.

We see the same tendency to respond to a situation as an undifferentiated whole in the child's impulsive actions. He acts without further consideration as the spirit moves him at the moment. If his ball rolls into the road, he runs to get it, oblivious of possible dangers from motor-cars. He may thus do foolish or naughty things because he can hardly help doing them. So Burt says that his young delinquents were really only naughty children. When they stole something they wanted very much, or set fire to a pile that made a glorious blaze, they were carried away by the magical spell of the immediate situation.² It follows that while we must help children to master their wrong impulses, it is an unpardonable error to treat their delinquencies as if they were premeditated sins.

When a child lives in each situation as a whole, he takes little account of its connection with the past or with the future. His world is one in which separate situations are apt to follow one another without definite breaks between them. One moment he may be in dire distress, but if his attention is diverted, he may suddenly begin to laugh. We older people live in worlds governed by general laws, and our situations are connected with each other by belonging to the orderly scheme of things

¹ C. Burt, *Mental and Scholastic Tests*, pp. 43 f. and 132.

² *The Young Delinquent*, p. 585.

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which we take for granted as the background and basis of our lives. But a child's world has no such background. His situations tend to be connected only in so far as they awaken the same thoughts and feelings because they are like each other. He therefore finds a stable basis for his life in familiar situations which recur in the same form. This leads him to form habits of doing the same thing in the same way, and when he acts in accordance with such habits he feels the same kind of satisfaction as older people feel when they act according to accepted principles. For the same reason, he feels disturbed if a situation to which he has become accustomed is repeated with some detail changed. In a new situation he often regards one feature only as important, but a routine situation cannot be altered without destroying his satisfaction in it. When a child of four or five is told a story he knows and loves, any alteration in the wording is indignantly corrected as a violation of the accepted text. A child's world is full of daunting mysteries, and he feels fully at home only on well-known ground. The mere fact that a situation has become familiar invests it with an almost sacred character. The routine of being washed and dressed becomes a kind of ritual which must be religiously observed in all its details. His whole world thus gains a stable foundation of uniformity and routine.

We have so far been speaking of features of the child's world which differentiate it from the world in which he will live as he grows older. These features will not entirely disappear, but they

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become less prominent as the child learns to think of his world as one of actual persons and things outside himself. He is enabled and indeed compelled to make this advance by the experiences of his daily life. He lives in a world of real situations, to which he must adapt himself and which he must therefore try to understand. The persons and things that arouse his feelings, especially his love or hate, inevitably acquire a reality and value of their own. Further, as his world becomes more real he wants to make actual changes in it. He has to take account of things as they really are, not simply as he would like them to be. He thus comes to have purposes as well as wishes and is eager to understand things as they really are.

From the very first the situations in his world generally had as their central features certain persons and objects, such as his mother or his toys, and since these persons or things are the recurring centres of many situations they become familiar friends or foes with a permanent reality and character of their own. As he grows older and thinks of them more clearly as objects outside himself they become outstanding denizens of the real world. He has felt love or hatred for them so often that he has developed a permanent tendency to have such feelings whenever he comes into contact with them. To such permanent objects of affection or dislike A. N. Whitehead gives the name of *Its*, and calls attention to their importance, even in the lives of grown-up people. "Our lives," he says,¹ "are dominated by enduring

¹ *Adventures of Ideas*, p. 361.

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things, each experienced as a unity of many occasions bound together by the force of inheritance. Perhaps it is the thing we love, or perhaps it is the thing we hate. There is a bare *It*—a real fact of the past stretching out into the present which concentrates upon itself the wealth of emotion derived from its many occasions. The emotional significance of an object as *It* is one of the strongest forces in human nature. It is at the base of family affection and of the love of particular possessions.”

While *Its* play an important part in the lives of older people, they are the permanent centres of a child's personal world, in which objects and events tend to be real and valuable in proportion as they are *Its* or closely connected with them. A child's father and mother, his dog and favourite toys, are felt by him to have claims upon him and others in their own right. Their happiness and welfare are as important as his own, and in his love for them he passes beyond his narrow interests in his own pleasures and desires. The greatest help we can give him is to see as far as possible that he has *Its* which he loves and not *Its* which he hates, for he will then insensibly grow more loving and less self-centred.

Since a child delights to deal with pleasant *Its*, we shall help him to learn with zest and good effect by leading him to become affectionately familiar with the things about which he learns, thus converting them in some measure into *Its*. A boy of five beginning arithmetic said he had made friends with 4 but not with 7, and James Sully tells us of a

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boy who habitually spoke of "good old W." Many teachers of young children appreciate the importance of this attitude and are successful in encouraging it, and it may well be continued in a less childish form throughout the Junior School. For example, we shall help our boys to form clear ideas of the measurements of angles by leading them to "make friends" with such typical angles as those of 30, 45, 60 and 90 degrees, and to take them as standards by which to measure others.¹

A child's sense of the reality and importance of the people and things about him is also developed by his experiences of being active and finding his activity helped or hindered by other people or by material things. During his second year he becomes an active little person doing a great variety of things purely for the pleasure of doing them. He runs for the sake of running and makes noises for fun. In such cases other people are valuable chiefly as ministering to his pleasure. But when he is two years old and upwards he wants more and more to achieve some definite result, and by trying to do so he comes to live in a world of actual facts and events in which other people and the things he has to deal with have an independent reality and qualities of their own. Thus he may be interested in putting on his clothes, but in order to do so his arm must go through the right armhole. He may be delighted to fetch something for his mother, but he must really fetch the thing she wants. By the time he is four most of his activities are of this purposive kind. He wants to play his part in family life, perhaps to

¹ See B. Petermann, *Das Gestaltproblem*, pp. 238 f.

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look after some pet or to help in the garden. He may be fond of drawing or of modelling actual things. When he builds with his bricks he tries to make a tower that will stand up. Moreover, he has more or less clearly in his mind what it is he wants to do. He can, that is, think of a possible change in the outside world as one to be made actual. In this way, he comes to form definite purposes and to plan things in advance. He likes to say beforehand what he intends to do or make. When a number of children of various ages were told to draw any picture they liked, no three-year-olds said what they were going to draw, but 36 per cent. of the four-year-olds named an object in advance, as did 80 per cent. of the children aged five and all those who were six.¹ It was clear that to these older children drawing a picture meant representing an actual object in the real world, whereas younger children draw things as they think them with little regard to their real shape.

In this world of real persons and things he finds his purposes constantly helped or thwarted by the persons and things about him. He therefore wants to know more about them and what they do. He has a growing desire to explore his surroundings, and he does so partly by asking questions, but also by investigating things on his own account, trying experiments and watching the results. From very early days anything new had a certain attraction for him, but in his later childhood his interest in what is new or strange tends to become an interest in conquering his world by knowing more about it. "The

¹ W. Werner, *Entwicklungspsychologie*, p. 160.

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five-year-old," say the Misses Kenwick,¹ "is in the stage when finding out things for himself is the great aim of his life. Like Toddy, who 'wanted to see how the wheels go wound,' he is on tiptoe with curiosity about everything."

The world in which a young boy lives when he plans his actions to produce definite results is a very different world from that of his earlier childhood. We may call it a world of serious work in contrast to a world of play. The passage from one world to another is gradual, but it can hardly be a smooth one. The child finds there are many things he must not or cannot do and many things he has to do although he does not want to. He has to adapt himself to the ways of older people whose point of view is different from his own. His advance, therefore, entails some measure of constraint and a loss of impulsive freedom. Many children begin to feel this constraint as early as their second year and go through a phase of obstinate self-assertion. In any case, it is almost inevitable that as a child finds life becoming a more serious business he should feel the need for some relief. He therefore returns at times to the freer world of play in which he lives not as a member of the grown-up serious world but in the more spacious atmosphere of his early days. In this way he lives alternately in two very different worlds.² But the two worlds may overlap. He can do serious things in a playful spirit and so transform drudgery into

¹ *The Child from Five to Ten*, 2nd Ed., p. 32. See the whole passage.

² See the description in K. Koffka, *The Growth of the Mind*, Chap. VI.

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adventure. So R. L. Stevenson tells us that he and his cousin enlivened the dull business of eating their porridge by telling each other of the gradual disappearance of the solid land of countries, the inhabitants of which found the ground being cut from beneath their feet.¹ Teachers are realising more and more that this mingling of work and play can help to smooth the stony path of learning in its early stages. But even when serious work excludes any definite play, it is important that the children should work with the minimum of constraint. They should feel pleasure in what they do and, within reasonable limits, be free to do it when and how they like. The Report on Nursery Schools tells us that "there is little doubt that manual and æsthetic development are better secured when the child is left free to make what he likes how he likes and, within reason, when he likes than by any set lessons."² This general principle applies not merely to manual work but to all forms of learning. Experience shows that we can give it due weight without interfering with the claims of order and routine.

But, after all, life is a serious business for children no less than for their elders, and the child's own eagerness to be active in his world may lead him to overtax his strength. "We speak of the playfulness of children," it has been said, "but their outstanding characteristic is their seriousness." It follows that in our efforts to promote a child's mental growth, we must give him opportunities not

¹ The chapter on Child's Play in *Virginibus Puerisque* contains many illustrations of the nature of a child's world.

² P. 130.

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only of being purposively active but also of resting and of playing without exertion. This is one means of making him happy in a peaceful and homelike world, and only in such a world can he pass through the critical period of childhood without lasting damage to his healthy growth.

CHAPTER IV

THE BOY'S WORLD

IN the last chapter we saw that as children grow older they live more and more in a world of actual persons and things and of stubborn facts which must be faced. By about the age of seven or eight they have come habitually to live in such a world and are no longer children but boys and girls.

Their next period of growth covers roughly the years from seven to twelve in the case of girls and from eight to thirteen in that of boys, though the beginning of adolescence which marks its close may occur before the age of twelve or not till after fourteen. The characteristic feature of this period is that both boys and girls are more especially interested in things as being real and in events in the real world of which they feel themselves members.

This matter-of-fact outlook on the world marks a new stage in their bodily growth as well as in the development of their minds.

During their childhood they grew fast and learned to control their legs and arms and larger muscles. As boys and girls they grow rather more slowly in height and weight, though girls as a rule grow faster than boys and by the end of the period the average girl has out-stripped the average boy. Their muscular strength increases rapidly and in this respect

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boys retain their initial superiority as well as their greater power to endure fatigue. Their increase in strength is accompanied by increased control of the finer muscles. They see things more accurately and are much more skilful with their hands. Here girls are usually about a year ahead of boys, for instance in the development of their sense of touch. Girls can also discriminate more precisely between colours and the pitch of musical notes. These differences between boys and girls are not without importance, but they do not affect the general character of the advance made by both alike.

The interest felt by boys and girls in the world of actual things is shown in many ways. For example, in their childhood both boys and girls delighted in fairy tales, which now lose their charm and are often looked upon with disdain. Boys generally turn with avidity to true stories of travel and adventure in which girls may also be interested, though they are also fond of books which give realistic descriptions of life at home or at school. Again, the spontaneous drawings of both boys and girls undergo significant changes. They come more and more to represent what their artists actually see and are therefore realistic rather than imaginative.¹

But a boy's interest in the real world is most fully satisfied when he is practically active in producing tangible results. In his games he no longer plays chiefly for the pleasure of playing but tries to do things that have some definite effect. He wants to

¹ See e.g. C. Burt, *Mental and Scholastic Tests*, pp. 317 f., who also discusses the difference between the drawings of boys and girls.

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make runs in a real game of cricket, to win a race, or to beat his friend at ping-pong or at draughts. More particularly, he delights in making things that are real and valuable. "At this stage," says Burt, "one widely spreading interest now comes rapidly and remarkably to the fore, and remains one of the most characteristic features of the whole period. This is the interest in making things. It has all the characteristics of an instinctive urge."¹

Meccano fascinates many boys because it enables them to make machines which really work, while their sisters are keenly interested in making clothes which can be worn. Tools of all kinds, from machine-tools to knitting-needles, have a special attraction for them, and they will take pains to acquire skill in their use. They thus gain practical experience of the qualities of things and the use to which they can be put. Between the ages of eight and ten most boys and girls learn much by actually doing and making things, and schools are more and more recognising the educational importance of this fact.

A boy's practical experience not only increases his skill and knowledge but also helps to determine his outlook on this world. He sees other people active in the same way as he is himself, and both they and material things help or hinder his own activities. When he kicks a football it resists his kick and then flies off on its own errand. He therefore tends to think of it as real because of what it does. Without knowing it he shares the view of the greatest of philosophers. "My suggestion," said Plato, "would be that anything which possesses any sort

¹ *The Primary School*, p. 272.

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of power to affect another, or to be affected by another even for a moment . . . has real existence; and I hold that the definition of being is simply power."¹ The character of any object, therefore, depends upon what it does or the use to which it can be put. This attitude is illustrated by the answers given by boys and girls of seven years old and upwards to the question: What is a horse? Or a chair? or some other concrete object. The answers were nearly always a statement of the use to which the object could be put. "A knife is what you cut with"—"A chair is what you sit on."²

The boy's keen interest in the usefulness of things shows, as Nunn tells us, that he has passed from the "wonder stage" of growth characteristic of his childhood to the "utility stage" in which practical usefulness is the chief criterion of value.³ But it is important to notice that this usefulness is not so much usefulness to the boy himself as usefulness in the world at large and, therefore, a permanent property which an object possesses and which helped to make it what it is.

In the same way, a boy thinks of people primarily as agents and values them for what they do. He tends to admire the strong and effective and to despise the weak and inefficient. Nelson is a hero because of the victories he gained and the trick he played with the telescope, but a panegyric on his bravery as an abstract virtue leaves boys cold. A boy's chosen friends are generally those who can do

¹ *Sophist*, 247 (Jowett's translation).

² See C. Burt, *Mental and Scholastic Tests*, pp. 42 and 132.

³ *Education*, p. 248.

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things he would like to do himself or with whom he can share some enterprise.

Again, a boy's interest in people and things as active leads him to look at a situation as a "chunk of events," not as a comparatively static collection of objects. If nothing particular seems to be happening, a situation has little interest for him. A girl of seven was taken to see *Cinderella* at a pantomime where the scenery was magnificent and a comedian kept the audience in fits of laughter, but where for a long time the actual story was in abeyance. The little girl was evidently bored, and at last asked pathetically, "When is it going to begin?"

It follows that when teaching boys or girls between seven and eleven we should appeal to their interest in events and processes rather than deal with static facts. Our geography lessons, for instance, will have as their main subject the lives and occupations of people in our own and other lands, while physical conditions will be considered as active forces affecting human life.

For a boy grasps the meaning of a situation by understanding how the people or things in it act and react upon each other. He often does so by seeing that what goes on is in principle the same as what happened in a situation already familiar to him. For example, he understands the working of a steam engine by its classical analogy to the boiling kettle and its moving lid. But in any case his grasp of a situation as an interesting whole involves a definite process of reasoning, though he reasons from one particular case to another rather than by applying clearly formulated principles. He has a clearer idea

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than he had as a child of the comparative sizes of things and their relative positions. He can also grasp the law of cause and effect, not as an abstract principle, but as the connecting link between two or more particular events. He is often keenly interested in comprehending such connections, and we ought to make full use of his desire to see and understand. More especially ought he to be encouraged to discover and explain facts for himself.¹

Another important effect of a boy's interest in persons and things as belonging to a real world external to himself, is that he differentiates himself more definitely from the world around him. He feels what it is like to act with a purpose as a relatively independent person. This is no new experience. In early childhood he sometimes asserted himself by refusing to obey his parents. Later he had fits of rebellion and proudly showed what he could do in his own strength. But it is only when he feels he can make changes in the actual world that he gains a more permanent sense of independence and of being freely active. In so doing he takes a great step forward in his advance towards living as a responsible person, playing his own part in the world of men and things.

But here, as always, a boy is able to be more freely active because he identifies himself more closely with the world from which come strength and inspiration. Speaking broadly, we may say that a child lives in a situation by feeling its value for himself, but a boy appreciates its value by making its purpose

¹ Useful suggestions are given in the *Report on the Primary School*, pp. 266 f.

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or demands his own. His new attitude is perhaps most clearly shown when he lives and acts as a member of a group, sharing the thoughts and purposes of the other members. We can see his advance in this direction if we watch children of different ages at play. Three-year-olds are generally not much interested in what other children are doing and so tend to play by themselves unless the game is organised by an adult. At five or thereabouts when they see other children playing an attractive game they want to go and play too. As soon, however, as they get bored or disappointed they are apt to quarrel or to turn away. But at seven or eight a boy is interested not merely in what the other boys are doing at the moment, but in the whole game which they are playing. He joins them to make up a side and takes his part in an organised game. In such cases a boy's interest in the game is a common interest in the full sense of the term. He is aware not only that other boys feel an interest like his own, but that his interests and theirs aim at achieving the same result by co-operative thought and effort. His own interest is widened and made more possible of achievement because he is a member of a group inspired by a common purpose.

A boy's power of sharing common purposes makes him a more effective member of society. He no longer simply adapts himself to what other people do or say, but by making their aims his own is independently active in attaining their common end. He shows initiative when playing football or cricket and makes his own contribution to a lesson when he enters into the purpose which inspires the class.

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His greater independence in sharing common interests leads him to make a further advance by judging their value by a more ultimate standard. If a common interest is achieved, will the situation really be altered for the better? The essential question about any interest therefore becomes, not who share it, but does it imply a true view of the situation as he sees it? He feels that the situation must be dealt with on certain lines and that a right interest in changing it for the better must recognise this fact. A boy of seven showed this sense of the demands which the situation itself makes upon us when he refused to stop building with his bricks though he was tired. "No," he said when his mother advised him to leave off, "the house must be finished, it must, it must." In the same way older boys feel that any duty must be conscientiously performed and that the truth must be told, not because people say so but from the nature of the case. They thus come to lay down certain rules of action to which all right conduct must conform. Their matter-of-fact attitude leads them to think of such rules not as general principles which can be explained but as laws to be implicitly obeyed. Boys between eight and twelve are, therefore, apt to be legalists, insisting upon the letter of the law, and are not infrequently unjust to innocent offenders. At the same time their insistence upon rules of conduct by which they and others must be judged gives them a code of ethics based not on popular opinion but on their own convictions.

For instance, one law of our dealings with one another is that we should be fair. It would be

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foolish to ask a boy what exactly he means by being fair, but he knows perfectly well whether a master, judged by his standard, is fair or not, and he admires or condemns him accordingly. Again, he feels that the law of group life is loyalty to one's leaders and to the best interests of the group. To be loyal to one's friends, not to let another man down, and to stand up for one's school, are instances of the kind of conduct which every decent boy feels to be incumbent on himself and others. "We would all rather run ourselves out," as Edward Bowen said, "than run out the other man." A boy's loyalty may take strange and even misguided forms, but it is, as a distinguished philosopher has told us, the foundation of all right living.¹

It is, however, only too easy for a boy to repress his own convictions about right and wrong and to take the more comfortable course of accepting other people's standards. The temptation to do so is specially strong at the age we are considering, when the common interests of school life are so insistent and absorbing. To help boys to maintain their spiritual freedom, our discipline and teaching must bring them face to face with real situations and their demands. Our discipline will not be autocratic, but give expression to the necessary conditions of good work. In our teaching we shall be fellow-workers with the boys in a common effort to appreciate some aspect of the world that is in fact real and valuable. We shall thus develop the boys' instinctive faith in the ultimate importance of things being right and true, and we shall do this most

¹ See J. Royce, *The Philosophy of Loyalty*.

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effectively if we think, and lead them to think, of the demands of the situations they encounter as being in the end the commands of God. "If the spirit of Elijah," said Arnold of Rugby, "were to stand in the midst of us and we were to ask him 'what shall we do then?' his answer would be 'Fear not nor heed one another's voices, but fear and heed the voice of God alone.'"¹

¹ Sermon quoted in Stanley's *Life of Dr. Arnold*, Chap. III.

CHAPTER V

THE WORLD OF YOUTH

BOYHOOD and girlhood lead on to youth or early adolescence. The transition is determined by the physiological developments associated with puberty, but it is also marked by significant changes in character and outlook, and since early times has been recognised as the entry upon the final stage of growth which ends in full manhood or full womanhood. The suddenness and rapidity of the changes that take place were at one time often exaggerated by psychologists, but recent investigations have confirmed the view of most parents and teachers that adolescence is not ushered in by a sudden bound into relative maturity. It is the culminating period of the continuous process of growth which began in early childhood. This fact, however, does not diminish its importance. For the boy's personal powers and characteristics, which before but were themselves in less developed forms, begin good to be more definite features of a unique personality. The boy comes to feel and behave as a precious human being and claims to be treated as real and instinctive of the greater individuality which marks being right growth is that each boy or girl advances her own lines, while the differences

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between the sexes which existed since early childhood now become patent and more pronounced. A girl's mental development before and during the period differs from that of her brother, partly because her physical growth is in some ways unlike his. They probably both began to grow markedly heavier when they were about eleven, but while she is not likely to add much to her weight after she is sixteen, he may continue to grow rapidly heavier for at least three years longer. Again, a girl generally grows much taller between eleven and fourteen, while a boy's marked increase in height usually takes place between twelve and sixteen, when he overtakes his sister. The girl, as a rule, is about eighteen months ahead of the boy in anatomical development, and grows into a maiden one or two years earlier than he becomes a youth. On the other hand, a boy's muscular strength increases rapidly till he is over twenty, whereas a girl grows only slowly stronger. These differences between the physical development of boys and girls accentuate the mental characteristics of the two sexes, to which we shall refer in a later chapter.¹

Equally important are the differences between individual boys and girls. They vary within wide limits in height and weight and strength and other features of their physical growth, and at least as much in the development of their minds. Thus some boys and girls seem to grow more mature and capable in an unforced natural way with little sign of the mental conflicts on which some writers have laid stress. In other cases minds are ungainly

¹ Chap. VII, pp. 80 f.

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as well as bodies, emotions are violent and self-control very difficult to maintain.

These differences, however, are only subordinate features of the advance towards maturity made by all boys and girls. In different ways and varying degrees they feel themselves individual persons living continuous lives which they can in some measure control and shape. Their sense of personality is shown by their more independent and comprehensive outlook on the world outside them, and even more characteristically in their pre-occupation from time to time with their own thoughts and feelings as experiences interesting in themselves. Their worlds thus come to have an inner as well as an outer side, which they can survey and try to change for the better.

This inward aspect of their worlds is, on occasion, of absorbing interest, chiefly because their emotions tend for physiological reasons to have the same intensity as the feelings of their childhood. But whereas a child is carried away by his feelings and yet does not think about them, an older boy dwells upon his emotional experiences and considers how to satisfy the desires to which they give rise. In this way he tends to live a kind of inner life which he is likely to keep hidden from prying eyes. From time to time he withdraws from the world of practical affairs into the private world of his own thoughts and feelings and ambitions.

This tendency is encouraged by the disappointments which a boy inevitably encounters in trying to achieve his widening interests, and even more by the fitful and partial character of the advance he is

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now making. He cannot suddenly and completely discard the ways of thinking and feeling and acting characteristic of his boyhood. Old and new attitudes are therefore inextricably mingled or alternate with each other. As a result, he generally tends to live an everyday life during which he continues to be interested chiefly in particular situations, though with significant changes in his attitude towards them, but on rare occasions the deeper feelings and ambitions of his inner life break through the veil of secrecy and find expression in words or deeds. It is in such moments that we catch a glimpse of the boy as he really is or is trying to become, and we may or may not find him very different from the boy we thought him. "I can see well enough," said East, in *Tom Brown's School Days*, "all the best fellows look on me with suspicion, they think I'm a devil-may-care reckless young scamp. So I am eleven hours out of the twelve, but not the twelfth."

It follows that we shall not do justice to boys and girls of this age unless we take account of their inward hidden selves of which our knowledge may be chiefly indirect. At the same time we shall exaggerate the changes and complications of their mental lives unless we remember that for eleven hours out of the twelve the new and wider background of their thoughts and feelings is a background only, which affects their behaviour in ways of which they are unconscious. They are, then, just ordinary boys and girls, and not the romantic or pathetic figures they were at one time supposed to be.

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The more a boy feels that he is living a continuous life both as a member of the world outside him and as a person with his own thoughts and feelings, the more does he live in his world as a connected system of things and not as a succession of particular situations. The greater coherence of his personal life involves and is promoted by his more comprehensive outlook on his world. This advance is shown in many ways. A boy of ten wants to make runs in a particular match ; when he is fifteen his desire to make runs is part of his wider ambition to be a good cricketer. When reading history, the younger boy is specially interested in particular scenes and characters ; the older boy appreciates the more general march of events. The younger boy says : I made a mistake ; the older boy : What a fool I was. In each case the younger boy is interested in a particular situation or object of which he takes the background more or less for granted. The older boy, taking a wider view of what the situation involves, appreciates its value as a situation in a comprehensive system of things to which it owes its meaning and importance.

The change of outlook has been compared to the alteration in the standpoint from which the heavens have been studied by astronomers. The early astronomers concentrated their attention on the sun and moon and stars, that is on the individual heavenly bodies they could see. The tendency of modern astronomy, on the other hand, is to deal with the material universe as a whole in which these bodies have their places by which

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alone their movements can be explained.¹ The universe is envisaged as a whole because the movements within it are governed by general laws. In the same way, the adolescent's world tends in some measure to become one great system with a background of universal principles which give meaning and value to particular events.

One token of this advance is that many boys between thirteen and eighteen show themselves more eager than before to extend their knowledge and in particular to grasp the wider implications of what they learn. A boy may become a specialist in some chosen field. One boy who was credited with little knowledge of the ordinary school subjects incidentally displayed an astonishingly intimate acquaintance with the ships of the British Navy. Or a boy may take all knowledge for his province and become an omnivorous reader. "I should like to read all the books that were ever written," said an able boy of sixteen. But mere information is not enough. Boys want to understand the general principles which explain particular situations. For they think of a situation not primarily, as they did in their boyhood, as a relatively isolated group of

¹ The illustration is borrowed from J. T. Merz, *History of European Thought*, Vol. IV, p. 778. Merz gives an illuminating account of the way in which philosophical thought has undergone a somewhat similar transformation, leading us to realise that the finite world of material objects and events is, as it were, embedded in a wider background, the world of values such as truth and goodness and beauty, the region of artistic creation and religious thought. He suggests that this advance reproduces in an immensely wider field the progress made in some measure by every normal human mind.

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things acting and reacting on each other, but as governed by general laws which give it a place in the world as a whole. They therefore feel keen satisfaction in grasping the wide scope of the law of gravitation or the process of evolution. They have reached what Nunn calls the system stage, and Whitehead the stage of generalisation,¹ when "the chief intellectual motive is the desire to cover the ground of a subject in a complete and systematic way." It is, therefore, natural for them to use abstract terms and to write longer sentences, because they want to bring the relevant points together in one coherent statement.²

We can trace a parallel development in their emotional life. Their feelings are aroused by situations and objects which owe their value to a wider background. A brave deed stirs admiration for the man who does it as well as for the action in itself. A boy tends to value his friend less for the particular thing he does than for being the boy he is, but his devotion may be all the greater on this account. In the same way he will follow his chosen leader through thick and thin. Or again, a beautiful landscape, the depths of a forest, distant hills and the star-lit sky may appeal to him not merely as beautiful in themselves, but as a revelation of the mysterious wonders of the whole world of nature. Not a few boys and girls at this age experience at times the rapt absorption in the beauty of the

¹ T. P. Nunn, *Education*, pp. 247 f. A. N. Whitehead, *The Aims of Education*, Chap. II.

² See C. Burt, *Mental and Scholastic Tests*, pp. 64, 66 and 132; and Stanley Hall, *Adolescence*, Vol. II, pp. 470 f.

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world which Wordsworth and Meredith have described.

In the same way, a boy's purposes grow more far-reaching as he tends, at any rate in his more rational moments, to be guided by fixed principles. He can think of his life as a whole and form comprehensive plans for his own future. Some boys choose their callings in life and make earnest efforts to fit themselves for the work they hope to do.¹ Others have narrower or less definite ambitions, but most boys and girls have at any rate passing visions of life stretching out before them as a whole that can be planned.

But a boy fixes his eyes more often on the present than on the future, and is eager to use his growing powers by taking an active and independent part in the life of his surroundings. He may become a zealous prefect or take the lead in some other field. He therefore demands free scope for his activities, and is often impatient of restraint and deeply hurt if he is not treated with the respect due to his position. He also develops a keen sense of responsibility. He recognises the wider effects of what he says and does and holds himself accountable for them.

These characteristics of early adolescence appear in varying degrees and forms in the daily life and work of most boys and girls. But it is in their "twelfth hours" that the advance they have made shows itself most clearly. For a boy's impulse to see and live in his world as a whole cannot find full

¹ Stanley Hall, *Adolescence*, Vol. I, Chap. VIII, gives many examples.

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satisfaction in the changing and detailed interests of ordinary life with its manifold imperfections. It can be satisfied only if he feels that the world of actual events has an unseen background of illimitable realities and laws. From his early days he was aware that in the end what matters most is for him and other people to do right things and to speak the truth. He now feels that he must live rightly not only on particular occasions, but as one who obeys the laws of all right living. He pictures himself as he would be if he were always animated by the spirit of these laws, and in his best moments he realises that his ideal of his own life should inspire and guide both his outward conduct and his thoughts and feelings and desires. He also forms ideals of other people's lives and even of material things, as they would be if they played their parts in a perfect world, and he implicitly assumes that in the end both human lives and material things are valuable only in so far as they embody in actual fact the ideals of what they ought to be.

For eleven hours out of twelve this assumption will lie dormant in his mind, but now and again it will lead him to recognise the supreme value of some person or thing of beauty or the utter worthlessness of what is altogether wrong. It is neither possible nor desirable for a boy to act deliberately from ideal motives or consciously to judge others by ideal standards except on critical occasions, but there are few boys and girls who do not from time to time have visions of some perfection which for the moment they feel has a supreme claim upon them, or of some person so lovable or some cause so great as to

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demand their absolute devotion. It is such moments of insight that we have spoken of as their "twelfth hours," and it is in such moments that they live most fully as members of the ideal world to which they have now found entrance.

It is true that a boy's ideals may be narrow and imperfect and his obedience to his vision fitful and half-hearted. His ideal of right living may be personified in a friend to whose obvious imperfections he is blind, or he may have a vision of his ideal self as brave and self-possessed and yet remain a weakling and a coward. But even a fleeting vision of an ideal tends to inspire some effort to realise it in daily life, while if an ideal takes permanent possession of a boy's heart and mind it may transform his outlook on the world.

The influence which such an ideal exerts is apparent in the devoted friendships which play so great a part in the lives of many adolescent boys and girls. A boy who feels his failure to realise his ideal of what he ought to be often thinks, rightly or wrongly, that his friend has succeeded where he has failed. His friend then stands for what is best in life and evokes his passionate loyalty and love.

"What a man looketh for in his friend and findeth,
And loving self best, loveth better than himself,
Is his own better self, his live lovable idea,
Flourishing by expansion in the loves of his life."¹

If his friend should be a girl, we have a case of adolescent love, in which the attraction of one sex

¹ R. Bridges, *The Testament of Bea*, vii, bk. IV, ll. 1375 f.

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for the other may be an element, but which is essentially a vision of an ideal personified in the girl he loves. It is true that friendship with a girl may degenerate into a mere sentimental attachment or even in morbid cases may lead to positive wrongdoing. Emotional instability is a recognised feature of early adolescence, and there is a danger that a boy may be carried away merely by the feelings his friend arouses and show his devotion in irrational ways. But recent studies have disproved the theory that adolescents are specially prone to sexual offences or indiscretions. The flirting to which some weak-minded boys and girls are prone results from a lack of self-control which takes this particular form mainly owing to the artificial conditions under which they live.¹ In more fortunate and normal cases the friendship between a boy and a girl may be of great benefit to both, and it may be suggested that the fewer conventional restrictions placed upon it the more likely it is to be healthy and invigorating.

Most boys, however, choose as their most intimate friends either other boys or not infrequently people older than themselves. They also find their ideals personified in men and women of whom they hear or read and respond by an attitude of hero-worship which is a characteristic feature of adolescence. Or again, they may show enthusiastic loyalty to some society, such as their home or school, which stands for a way of living that appeals to them as absolutely right.

When a boy finds his ideals realised even imperfectly in the world outside him, his own grasp of

¹ See Murphy, *Experimental Social Psychology*, p. 430.

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them becomes stronger and his efforts to achieve them are intensified. If he knows he ought to be brave, he realises more fully what that means when he sees the pluck of other boys. His ideal then ceases to be a vague aspiration and becomes a system of definite purposes and ambitions. In the same way life at school shows him how much more is involved in living rightly than he could have himself imagined. And as his ideals become more definite, he finds the way to achieve them marked out for him to follow. If he thinks of himself as a first-class cricketer, there is the school professional or some other successful player whom he can admire and imitate. In his efforts to live as he ought, he finds help and guidance both in the examples of those better and wiser than himself and in the common life he shares in so far as it embodies his own ideals in a wider form. His school, for example, may provide him with a kind of plan on which to organise his own life. For by playing his full part as a member of the school he forms the habits and develops the outlook which make him more like the boy he fain would be. Moreover, he finds that his ideals are in principle shared by others. They are, therefore, essentially common ideals, and are developed and strengthened in the same way as his other interests grow wider and more effective by being shared. We see these influences at work very clearly in many troops of Boy Scouts and Girl Guides.

But not only are a boy's ideals developed by his life in a society in which they take visible form. He also gains invaluable help in facing his own mental difficulties and troubles. We have seen how his

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rapid advance towards maturity almost inevitably brings some confusion into his thoughts and purposes and his feeling of greater independence may lead him to assert himself in opposition to those about him in ways which disturb his mental peace. Boys of this age are sometimes difficult to manage and, as criminal statistics show, are tempted to rebel against law and order. Their unruly outward behaviour is at once a cause and an effect of conflicts in their own minds. Many boys and girls happily pass through this difficult period with only occasional times of acute mental distress of which their conduct shows but little sign. But not a few have long or short periods during which they are unduly absorbed in their own troubles and tend to grow introspective and self-centred.

To some extent every boy must fight his own battles; whether they are fierce or comparatively mild, but he can do so only in the strength which comes to him by living as a member of his world. In his more definite and conscious mental conflicts he gains help by seeing his ideals realised in the world around him, but he also finds relief by absorbing himself in the actual world and by following his instinctive inclination to get others to share his troubles. When he is working or playing hard he has no time to think about himself, and by achieving his interests in outward things he unwittingly brings order into his own life. Or again, when he is distressed and tells his troubles to a friend they become lighter by being shared and look less mountainous when he views them through another person's eyes. Sometimes sufferers from

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severe mental conflicts instinctively seek relief by giving outward expression to their feelings in writing or in symbolic pictures. They thus tell the world their troubles and so cease to be obsessed by them. Their distress then becomes in a sense part of the world outside instead of a hidden canker in their own life. For example, a girl objectified her mental distress, due to her morbid affection for an elderly man, by making a full confession in an English Essay paper, and some soldiers suffering from shell-shock drew pictures symbolical of the horrors they had experienced.

But the world in which a boy lives is radically imperfect, and often fails to give him the help he needs. The demands he makes upon it may be unreasonably high, but the keener his sense of ideal values the more likely he is to be impressed by the difference between life as it is and life as it ought to be. In some cases he may feel bitter opposition to much that goes on around him. If his character is strong he will then play the rôle of a drastic reformer, but a weaker boy is likely to become a morose critic or a spasmodic rebel. Fortunately, not many boys are fundamentally at loggerheads with their homes or schools, but occasional antagonism or discontent is only to be expected and calls for careful and sympathetic treatment.

The same problem arises in a more difficult form in the boy's relations with the whole community of which he is born a member. His wider outlook upon life makes him vaguely or definitely aware that the social groups to which he belongs, such as his family and school, have as their background first

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the nation and then Western civilisation as a whole. He finds his own life and the lives of other people shaped and controlled by vast systems of common interests embodied in laws and institutions, economic arrangements and social traditions.¹ To this pervasive background he has to adapt himself in order to become an effective member of society, and the task cannot but be an arduous one. For historical and other reasons our contemporary social order is apt to satisfy neither his insistent needs nor his new-born ideals. A happy home and good school, healthy conditions, suitable employment and opportunities for recreation may go far towards remedying in his particular case the evils and weaknesses of the wider world, but less fortunate circumstances may make it almost impossible for him to live a normal healthy life. Of Burt's young delinquents, 52·8 per cent. suffered from poverty, 57·9 per cent. from defective family relationships, 60·9 per cent. from defective discipline, 25·9 from vicious homes, and 45·2 from bad conditions outside the home.² Moreover, apart from such special circumstances, the weight of custom and tradition or crude authority presses heavily upon many boys just when they feel most strongly their need for wider freedom. At least equally serious is the way in which the existing order may pander to their desires, and degrade instead of sublimating them. "That pale-faced boy first knew love, not when he looked at a girl whom later he might marry, but when a dirty picture post-card caught his eye or he

¹ Compare Graham Wallas, *The Great Society*.

² *The Young Delinquent*, p. 53.

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watched a suggestive film.”¹ From such evil influences a generous and high-minded boy may be happily immune, but as he looks out on the world with newly enlightened eyes he may well feel indignant or disheartened. He may feel that money and machinery count for too much and that our society and our culture tend to undervalue the essential worth of human life.²

It can hardly be said that our schools as a whole have faced and solved the problem of how to help their boys and girls to overcome the difficulties which thus confront them. But some schools and teachers are showing how much can be done by leading boys to understand the causes of much that seems amiss and to appreciate the heroism shown in many lives and efforts. Where, however, the schools have often failed, boys and girls themselves are becoming increasingly active on their own account. One of the most hopeful movements of our time is the growth of many youth organisations in which boys and girls of sixteen and upwards band themselves together as a special section of the community in order to make the world in which they live more like their own ideals.

We need not take a pessimistic view either of boys or girls themselves or of the world in which they live in order to see that a boy's active membership of his world, while undoubtedly essential, cannot satisfy his deepest needs. His ideals of what is

¹ Graham Wallas, *The Great Society*, p. 66. See the whole chapter.

² See A. N. Whitehead, *Science and the Modern World*, esp. Chap. XIII.

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right and true and beautiful are shaped by the influences of his social life,¹ but their supreme value and authority do not depend upon what people think or say or do. They belong to a world of ultimate realities more fundamental than the world of actual life. In the end no doubt honesty is the best policy, but only because honesty is in itself absolutely important. A boy is unlikely to make these things clear to himself, but he feels in his heart that his ideals have a claim upon him different in kind from that of what is merely useful. For his ideal interests are not merely social but essentially religious. He may not think of himself as religious in the conventional sense and may even feel repelled by organised religion. But if he has been fortunate in his upbringing he is likely to seek for lasting peace of mind by consciously turning to the ultimate power and perfection which is unchanging behind the conflicts and failures of the actual world.

Some psychologists have supposed that early adolescence is normally a time of strong religious emotion culminating in the experience of "conversion." More recent writers have shown that such a view exaggerates and distorts the facts.² Nevertheless it has been recognised from very early times that the wider outlook and new experiences

¹ See MacDougall's account of the development of the self-regarding sentiment. *Social Psychology*, Chap. VII.

² See Murphy, *Experimental Social Psychology*, pp. 427 f.; E. T. Clark, *The Psychology of Religious Awakening*; and for the older view, Stanley Hall, *Adolescence*, Vol. II, Chap. XIV, and R. Coc, *The Spiritual Life*. Compare also R. M. Thouless, *Psychology of Religion*, Chap. XIV.

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of adolescent boys and girls enable them to appreciate more fully the meaning and value of religious faith, and one of the highest tasks of home and school, of the Christian Churches and the community at large, is to develop their wider and deeper interest in religion in a natural, healthy way.

PART II

THE GROWTH OF THE BOY'S MIND

CHAPTER VI

A BOY'S MIND AND ITS STRUCTURE

WE have so far been speaking of a boy's mental growth chiefly as it is shown in the development of his world, that is of the system of things in which he feels an interest. But we can also look at his growth from another point of view. We can think of the boy as an active, living person and consider more particularly the ways in which he thinks and feels and strives. For example, in the case of a boy learning a lesson we have so far considered mainly the effect of his learning in widening his world, or more briefly what he learned. We shall now deal specially with his activity in learning, what he did when he learned, or how he learned. These two points of view cannot be rigidly distinguished, for each aspect of the boy's mental growth involves the other. At the same time, by concentrating our attention first on one aspect of a boy's growth and then upon the other we get a clearer view of the process as a whole.

When we try to explain what a boy is doing at a particular occasion, for instance in a lesson, we must go farther back than the beginning of the situation to which he is responding. In order to understand why Jones gave the answer he gave, and feel that our question is beyond our power. And in order to have to know in impossible detail with respect to his life.

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and tendencies he was born and how they were developed in the course of his experience. We can, however, understand how it came about that he gave an answer at all and form some idea of why he gave the kind of answer he did. We can say in general terms that he gave an answer because he was born a person with the power and tendency to be interested in the things about him and to be active in achieving his interests. The particular answer he gave was an answer to a definite question and what he said was broadly determined by that fact, but the form his answer took was due to the individual characteristics of the boy himself, to the extent of his knowledge, for example, and the way he habitually spoke. We must, therefore, think of him as being ready to be active in certain characteristic ways when the need to do so arises. Psychologists call the power and tendency to respond to a certain situation along certain lines a mental *disposition*. We use the term disposition in the same general sense when we say: He has a disposition to be generous, but they give the word a more definite meaning by regarding a boy's mind as having a great number of dispositions which make him ready and able to think and feel and act in the way he does. So a boy has dispositions to love his mother, to play games and to read detective stories. The general answer to the question why the boy's answer in class took the form it did is, therefore, that he has certain dispositions which led him to respond to that particular situation in that particular way. We must note that a disposition is not an activity but a characteristic of the boy's mind which makes

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an activity possible. A boy's disposition to play cricket includes the skill and knowledge he possesses as a cricketer, but it is as different from his actual activity in playing the game as are his bodily strength and skill from the movements of his body when he throws a ball. We may compare dispositions to actors behind the scenes ready to appear on the stage and play their parts, or to loaded guns ready to be fired. But we must remember that a disposition is a quality of the boy's mind, and though it is convenient to speak of it as being active when the boy acts in accordance with it, it is really the boy who is active and not the disposition as an independent actor.

We can hardly help speaking of a boy's dispositions as if they were more or less separate from each other. We have spoken, for example, of his disposition to play games and to read detective stories. But the boy's mind is active as a whole in everything he does, and though his activity is guided more particularly by some one disposition, other dispositions also exert some influence. When a boy reads a detective story his absorption in it may be attributed to a special disposition to enjoy such stories, but his dispositions to admire skill and courage, to exercise his ingenuity, to revel in imaginary horrors, and many others, may be inextricably combined with his dominant disposition, and we cannot say where the effect of one disposition ends and that of another begins.

We may, therefore, think of a boy's mind¹ as having

¹ A boy's mind is the boy himself regarded as thinking and feeling and striving, but it is convenient to speak of his mind in order to show that we are speaking of that particular aspect of his life.

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an indefinite number of dispositions connected with each other in countless ways. These dispositions form a system which is active as a whole on any given occasion, but it is guided primarily by some central disposition aroused by that particular situation. The central disposition is supported or opposed by related dispositions, while others remain in the background and have little direct influence on the boy's activity. When he is reading the detective story his disposition to play football is a characteristic of his mind but does not appreciably affect what he is doing.

We cannot directly observe a boy's dispositions but infer that he has them from watching how he behaves. We also see him behaving in the same characteristic ways from hour to hour and day to day. We therefore conclude that his dispositions are more or less permanent features of his mind. His whole system of dispositions form what psychologists call the structure of his mind, that is the whole body of powers and tendencies to be active which make him the boy he is. In a boy's mental structure we must include the skill and knowledge he possesses as well as his habits of thinking and feeling and acting, for these are resources at his command when he responds to a situation by feeling and achieving an interest in it. But he uses these resources in the service of dispositions active on that particular occasion which are thereby made more effective. For our purpose, therefore, we may think of his mental structure as consisting of dispositions which include the skill and knowledge of which they can make use.

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A boy's dispositions are of various kinds of which we need here mention only two. In the first place he has dispositions which lead him to take up certain attitudes towards objects and situations. These attitudes may be shown in his habitual behaviour, as when he is prone to take a kindly or a censorious view of things, or they may be temporary attitudes. He may, for example, as we say, get of out bed the wrong side. But in any case, his attitudes are not the result of definite thoughts or feelings, they are the outward expressions of comparatively vague dispositions which, metaphorically speaking, colour his mental structure.

Secondly, the more definite elements in a boy's mental structure are dispositions to feel certain interests or types of interest. This class of dispositions is clearly of great importance, since the boy responds to any and every situation by feeling an interest in it. We shall speak of them as dispositional interests, but being dispositions they must be clearly distinguished from the interests he actually feels.

While a boy's mental structure is relatively permanent it is not fixed and lifeless but develops as he grows older. Moreover, it develops by its own activity. His dispositional interests grow wider and more definite and coherent by being active in the interests he feels, and besides this his mind is active internally in ways of which he is unaware, just as his lungs are active when he breathes though he may know nothing about them.

Of these two modes of growth, the former is familiar to us all. Our teaching is based on the assumption that when a boy has felt and achieved

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an interest in doing something, he has increased his power of doing it easily and effectively, that is, he has slightly developed his dispositional interest. This assumption is on the whole justified by experience, but it will throw light on the constitution of the boy's mental structure and the way in which it develops if we briefly consider what improvement can be expected to take place.

Suppose, for example, that a boy does a number of subtraction sums. He gains skill in doing such sums, that is, acquires a permanent power of doing them easily and correctly. But, perhaps to our surprise, experiments prove that he does not become appreciably more able to do sums in multiplication.¹ He can do division better because it involves subtraction, but in multiplying he does not subtract. It would appear, therefore, that skill in an actual operation is increased by practice, but the improvement does not spread to any great extent to other operations. In the same way it has been found that teaching a boy to reason correctly in reading and writing Latin or in doing mathematics does little to increase his ability to reason in history or geography.

We must not, however, infer that when his skill in subtraction is increased he simply becomes able to do exactly the same thing again more easily and quickly. In that case, practice in subtracting 3 from 7 would not help him to subtract 5 from 8. What practice helps him to do is to deal with a certain kind of situation and to achieve his interest

¹ See "Report in Formal Training" in the *Report of the British Association*, 1930, pp. 279 f. Compare P. Sandiford, *Educational Psychology*, Chap. 14.

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in it by being active on the same lines as before. He learns, not merely to say $7 - 3 = 4$, but to perform the operation of subtracting whatever the numbers are. A dispositional interest is like the skill of a craftsman able to do any job in his trade, not like the efficiency of a machine which can only do one thing. As it develops, the boy increases his power of dealing with a certain type of situation, but situations never recur in precisely the same form, and the boy has always to adapt himself to somewhat new conditions. This is what his previous experience enables him to do. When he comes to do another sum he knows rather better how to set about it. He has a feeling of familiarity and some confidence in his skill, and can at any rate put the sum down more easily. This means that his dispositional interest in doing sums has been developed to a slight extent, not merely by his greater skill in a particular operation but as a living growing whole in which this skill is only one special element.

Further, by doing a sum the boy takes a small step towards developing a permanent attitude to arithmetic, liking or disliking it a little more and with a keener sense of its value or lack of value. Finally, he grows a little more or a little less persevering, more or less orderly in his work and ingenious in meeting difficulties.

We see, therefore, that when a boy's dispositional interest becomes active in an interest which he actually feels and achieves, it tends to develop partly by increasing some definite skill and partly as an element in a wider whole to which this skill contributes.

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The second way in which a boy's mental structure develops is by its own internal activity. The dispositional interests and other elements of his mental structure are active even when they do not give rise to consciously felt interests. The actors, we may say, rehearse their parts and talk to each other behind the scenes. We can tell that they do so only by noting effects which we must attribute to such internal activity. For example, when we recall a scene or incident after a considerable interval we often find that our thought of it is different from the thought we must have had when we first saw it. If we revisit an interesting ruin after a number of years we may find that our mental picture of it omits some important features and perhaps includes others which in fact are not there. Prof. F. C. Bartlett found that when someone who had read a story was asked later to reproduce it, the result was nearly always surprisingly different from the original.¹

Another example is provided by the common experience of forgetting. We cannot recall the name of a man, though a short time ago we knew it quite well. Some change has clearly taken place in the structure of our minds. One explanation sometimes given is that our dispositional interest in his name has been made less definite and effective by the antagonism of some other interest. We may dislike the man and so have a tendency not to think clearly about him or anything belonging to him because to do so would be unpleasant. In that case

¹ *Remembering*, Chap. V. Many examples are given in this chapter and elsewhere in the book.

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we do not recall his name because we do not really want to think of it.¹

Again, our minds are internally active in a rather different way when they go on working in a certain direction without our knowing anything about it. Most of us have wakened in the night to find that we have discovered the answer to a problem which baffled us before we went to bed ; and Dr. P. B. Ballard proved that when children had learned a piece of poetry they could remember it better after the lapse of a few days than they could immediately after learning it.² Here, again, we must suppose that their minds had gone on working while the children were busy about other things. There is reason to believe that the internal activity of our minds is most effective when we are not exerting ourselves, and it has been paradoxically said that boys do their best work in the holidays and in the intervals between lessons.

The general effect of these two types of mental activity is that a boy's mental structure grows more definite and more unified. We can trace the process in the development of his various dispositional interests. For example, when a boy begins to learn geography, his knowledge is vague and grows more exact as his studies proceed. But his interests also become more closely connected with each other as elements in a coherent system. Thus

¹ T. P. Nunn, *Education*, pp. 54 f., gives some amusing examples of this kind of forgetting. Compare E. Jones, *Papers on Psychoanalysis*, pp. 41 f.

² "Reminiscences and Obliviscence," *British Journal of Psychology*, Monograph Supp. II. See T. P. Nunn, *Education*, p. 51.

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his interests in his work, his games, his friends and his teachers contribute to his comprehensive interest in his school. In this way a boy's dispositional interests tend in some measure to form hierarchies in each of which some central interest gives unity to one department of his life. The process may even go so far that some supreme interest becomes the dominant motive of his life as a whole, as when his love for a friend or for his school or for God provides temporarily or permanently a rallying point for all his other interests.

This organisation of a boy's interests is aided by the fact that a situation is a whole with many elements or parts. It therefore often includes objects which appeal to several of the boy's interests. In such cases, while he thinks and acts primarily under the influence of some central interest, other dispositional interests may be awakened and developed to some extent independently of his central interest. Thus, if a boy either greatly admires or heartily detests a master, his emotional attitude may be reinforced during a lesson in which his attention is in the main concentrated on the work he is doing. Most of our wide and dominant interests are partly developed in this incidental unconscious way.¹ The point is put with whimsical exaggeration by the school-master, Mr. Don, in Henry Newbolt's story *The Twymans*. When Mr. Don was asked why Public Schools give so much importance to athletics he

¹ In the *New Machiavelli*, Mr. H. G. Wells gives an illuminating description of the growth of the "self behind the frontage" which is more of the real man than the "ostensible self." See especially Book III, Chap. I.

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replied¹: "We do so because they are wholly unimportant. This is the doctrine of by-products. Pursue one thing to gain another—seek the trivial to find the permanent. Observe. I must have an object for my walk: I go to buy a pig, or pay a call upon a fool: as I go along—out of the corner of my eye—I gather beauty. My liver too benefits. . . . We learn to hit a ball, to call it *σφαῖρα* or *pila*—what do we gain by that? Nothing, but incidentally we learn to construct the universe." We shall not understand the boys we teach nor the influences of school life unless we give due weight to this doctrine of by-products.

The development and organisation of a boy's dispositional interests involves a corresponding change in his dispositional attitudes. As we go through life we unconsciously tend to assume attitudes towards persons and things and so to develop corresponding dispositions. A boy who often feels discontented forms a disposition to approach any situation in a vaguely aggrieved frame of mind. On the other hand, a boy who habitually works hard comes to a fresh task in a willing spirit. One of the most valuable results which follow from good teaching is that a boy develops not only definite interests but also a background of attitudes which will probably continue to influence his thoughts and actions long after he has left school.

This rough sketch of the way in which a boy's mental structure normally develops must not lead us to suppose that the process is a simple one, proceeding without serious interruption and possible

¹ P. 88 f.

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retrogressions. A boy's interests may obstruct as well as strengthen one another. If he is absorbed in his school life he may be neglectful of home duties. And apart from possible conflicts between his interests, changes may take place in the structure of his mind which retard or cripple his mental growth. A boy who one term seems to be getting on well may during the next term deteriorate both in his work and in his character.

Of the many developments which may adversely affect a boy's mental growth only a few can be mentioned here. In the first place some interest which ought to be subordinated to others may come to dominate a boy's mind. A boy may be so keen on games that his work seems unimportant. Or his desire to be popular may lead him to do things irreconcilable with his higher interests. In somewhat the same way a boy's mental growth may be retarded, because he expends too much of his energy in a certain direction. If he tires himself out, either in playing games or in doing his school work, his mind grows narrow and one-sided.¹ A boy or man who habitually gives way to his feelings and so develops the emotional side of his mind, deprives himself of the energy he needs in order to perform resolute actions, while a boy or man who is constantly absorbed in strenuous efforts to do things, leaves himself little time or strength to think or feel. If a boy habitually tries too hard to learn he will not appreciate the meaning of what he is endeavouring to master, and the more he tries

¹ See C. Spearman, *The Abilities of Man*, Chap. VIII, "Universal Mental Competition."

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the less does he succeed. Some teachers would do well to bear in mind E. P. Titchener's statements : " The very fact that we try to attend means that we are not giving full attention," and as a rule " the greater the effort, the lower the degree of attention." ¹

Again, a series of painful experiences or a severe mental shock may leave a lasting trace on the boy's mind which seriously interferes with its efficiency. A boy who has been repeatedly intimidated by a master may be quite unable to do his work. As an illustration of how an experience of abject terror may affect the mind we may quote a well-known case described by Dr. W. H. K. Rivers.² Among his patients was a doctor with an uncontrollable dread of being confined in any enclosed space, such as a railway tunnel or a theatre. During the war he was compelled to spend a good deal of time in dug-outs, and his fear became so intense that his health gave way and life became almost unendurable. The cause of his distress was in the end traced to a long-forgotten incident. When four years old he went alone to see an old rag-and-bone merchant to get a halfpenny for something he had found. He went through a door into a dark narrow passage, a turning from which led to the house. When he had got his halfpenny he came back into the passage to find the street-door shut and a growling spaniel at the other end. He was too small to open the door and was overwhelmed with terror. This nervous shock left a permanent tendency to feel

¹ *Textbook of Psychology*, p. 295.

² *Instinct and the Unconscious*, pp. 170 f.

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any enclosed space as a prison from which it was vitally important to escape. Dr. Rivers cured this patient by leading him to understand the reason for his fear. In other words, he helped the man to break down the barriers which separated this particular interest from the rest of his mental life.

We have quoted this case at length because it shows how far-reaching may be the effects of interfering with the healthy working of a boy's mind. The patient's experience was no doubt exceptional, but a good many boys and girls suffer in a less obvious way from nervous or emotional shocks.¹ A boy's mental structure is at least as delicate an organism as his body, and we ought to take as much care of his mental as of his physical health. To coddle him is disastrous, for his mind, like his body, grows strong by having plenty of vigorous exercise in the open air and we need not try to prevent his mental feet from getting wet. On the other hand, if a boy is really unhappy, or suffers from some serious mental malady, superficial remedies are useless and we must do our best to find out the deeper hidden reasons for the boy's unhappiness or wrongdoing. While in no wise underrating the boy's own responsibility for his lack of mental health, we shall remember that his mental structure is only within narrow limits under his control. We must, therefore, try to understand him better than he can understand himself, and in the light of that understanding give him the help he needs.²

¹ See C. Burt, *The Young Delinquent*, Chap. XIII.

² For some suggestions see C. Burt, *The Young Delinquent*, pp. 56 f.

CHAPTER VII

SOME INDIVIDUAL DIFFERENCES

THE minds of all normal boys and girls develop on the general lines sketched in the last chapter, but this does not prevent individual boys and girls from being very different from each other. Two minds, like two faces, are never quite alike, and the better we know them the more fully do we realise both their resemblances and their differences. Each boy is born with a distinctive though undeveloped mental structure, and the particular characteristics of his mind grow more pronounced as he gets older.

Each boy, for example, has a certain measure of general intelligence which he tends to show in almost everything he does. Jones is a bright boy, whether he is doing mathematics or history or playing cricket, though he may do one of these things better than the others. Brown, on the other hand, is slow and rather stupid, except perhaps in some favourite pursuit. Some psychologists hold that Jones's brightness and Brown's dullness are features of their respective mental structures which influence all they do. Other authorities maintain that we call Jones bright because he shows great intelligence in many directions and less intelligence in a few others. The average intelligence he shows is, therefore, high.

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But whichever view we take, we can credit him with a degree of general intelligence which can be approximately measured by the tests devised for that purpose.

As a result of such tests it is usually held that a boy's general intelligence increases steadily until he reaches an age between thirteen and sixteen. Its rate of growth, however, varies greatly from boy to boy and can probably be quickened neither by the boy himself nor by his teachers. † All a boy can do is to make the best use of the intelligence he possesses, and it is his school's business to help him so to do. It is, therefore, very important that a boy should be given work which makes him do his best, but which is not beyond his powers. A very able boy, for example, should be encouraged to do work which exercises his powers to the full. In class-teaching there is always a danger lest stupid boys should become discouraged and the brightest boys kept back. Professor Burt found in a number of classes that the really backward children did even worse in school than the measure of their intelligence led him to expect. Children only slightly below the average were stimulated to do nearly as well as their abler comrades, but the brightest children were only half as much above the average in their work as they were in general intelligence.¹

But whatever may be the measure of a boy's general intelligence, he is sure to show more ability in some directions than in others. Nearly all boys can do something unusually well, or at any rate better than they do other things, while in certain

¹ *Mental and Scholastic Tests*, pp. 177 f.

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directions they are comparatively or markedly unsuccessful. Spearman tells us, with probably deliberate exaggeration, that "every normal 'man, woman or child is a genius at something and an idiot at something."¹

A boy's general intelligence therefore roughly indicates the level he may be expected to attain in most of the things he does, but in his special subject or field of work his intelligence is likely to rise a good deal above this level, while in branches of activity for which he has no aptitude he will be relatively dull. Very great ability in one direction is not infrequently balanced by very small ability in another. A boy who has the makings of a skilled craftsman may fail hopelessly at languages. At the same time a boy's ability in a certain direction may lead him to show intelligence in related fields. A boy who is able to enter into the thoughts and purposes of people unlike himself is likely to do good work in history and also prove an efficient prefect.

We cannot discuss the question of how far a boy's education ought to aim at developing his special gifts and how far it should help him to make good his natural deficiencies by hard work. We may, however, stress the importance of giving outstanding ability every possible encouragement, while a boy may have so little capacity for some subject that it is worse than waste of time for him to pursue it. In any case, both a boy's general intelligence and his individual abilities should be taken into account in choosing the subjects in his curriculum, and also in the methods by which we

¹ *Abilities of Man*, p. 221.

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teach him. Even class-teaching on traditional lines leaves room for a great variety of detailed methods ; a class ought not to be a collection of boys learning the same things in the same way, but rather a group of learners contributing to the common lesson by using their special abilities and adding their special knowledge to the common stock.

Boys differ, not only in intelligence, but in other ways not so easy to measure. It would appear, for example, that the general intensity of a boy's emotions varies from one individual to another. One boy tends to respond to situations by feeling very strongly about them, and tends, therefore, to live them primarily from within. Another boy looks at things mainly from outside and his feelings are only slightly stirred, while in a third the two attitudes more or less balance one another. Boys who are exceptionally emotional are liable to be carried away by their feelings. They therefore find it difficult to exercise self-control and are described as emotionally unstable. They are obviously prone to act hastily in the heat of the moment and to get into trouble, not through wilful wrongdoing, but almost without knowing what they are about. Burt found that his young delinquents were often emotionally unstable, and that many of their misdeeds were the result of their consequent lack of self-control. It is, therefore, well to remember that our black sheep may be suffering from an inborn tendency which they find it very hard to master. What they chiefly need is some strong central interest which will give greater unity to their lives

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and provide a healthy outlet for their feelings. Not a few boys have been saved from disaster by being given responsible positions or by taking an enthusiastic interest in some subject or game or hobby. Again, some boys tend to be efficient in all their actions, determined and persevering, sure of themselves and leaders of others. But we also know boys who are weak and indecisive in action, lacking in self-confidence and easily discouraged. This difference in the power to will or to achieve an interest is a difference in mental structure which will probably in some measure persist through life. There is, however, reason to believe that a boy belonging to the latter type can lessen his inborn weakness, and that he can be helped to do so by wise and stimulating treatment. Nevertheless, some boys will always find it difficult to hold their own while others find it easy to succeed, and the former class is not necessarily the less deserving.

One other respect in which boys differ from each other may be briefly mentioned, namely, in their liability to fatigue. Fatigue generally leads to a falling off in the quality of the work that is done and in the worker's speed. It also shows itself in a sense of weariness, which must be distinguished from boredom. Under the stress of excitement a tired boy will sometimes go on working for a time without diminishing his output or being conscious of fatigue, until he suddenly finds he can do no more and is suffering from the strain. Experimental investigations show that we cannot generalise about the extent to which a boy's work or play or other activities will grow less effective as he gets tired.

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We cannot, therefore, be sure that a boy is not working too hard because his work is as good as ever. It seems, however, that some boys easily get overtired by doing hard mental work of any kind, while others are specially fatigued by working at mathematics or some other particular subject. We ought to notice and allow for these peculiarities, the neglect of which is responsible for many cases of overwork.

So far we have been speaking of individual differences found in both boys and girls, but something must be said about the psychological differences between the sexes. These differences have been widely discussed, but in the present state of our knowledge we cannot say with confidence exactly what they are or how far they are inborn. Speaking generally, they appear to be due to an innate dissimilarity between the mental structures of boys and girls, and this dissimilarity has been considerably increased by the traditional ways in which boys and girls are educated, both at home and at school. Boys and girls are also subject to different social conventions. They wear different clothes, and the parts they play in the world are not the same. Partly but not entirely for this reason, their interests are apt to differ in significant ways, and by pursuing these interests they develop the special characteristics of their sex. Recent changes in girls' education and in the general position of women have undoubtedly affected the outlook on life of most girls and to a less extent of boys. For example, girls are now more keenly interested in competitive games and share the ideal of fair play

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in the shape first given to it by boys. Further developments can be expected in the future, but meanwhile we have to take boys and girls as they are, and it is unlikely that the more fundamental distinctions between the sexes will be greatly altered.

One fact which has been established by recent investigations is that one boy may differ mentally from another boy, and one girl from another girl, more widely than the average girl differs from the average boy. Further, it is reasonably certain that boys tend to differ among themselves more than do girls of the same age. On the average, boys and girls have an equal measure of general intelligence, but more boys than girls are very able and more very stupid, while a larger proportion of girls have medium ability. When, however, we consider special capacities and interests, we find that girls tend to take more interest than boys in literary and artistic subjects but less in mathematics and science. What is more important is that a girl is strongly influenced by her emotions, and especially by such feelings as those of tenderness and submissive loyalty. Girls tend to be amenable to discipline, imitative and painstaking, and often show self-sacrificing devotion to a person or a cause. Boys are rather more independent and original, less conscientious in details and more inclined to be critical. Perhaps it is roughly true to say that girls tend on the whole to live a situation from within and boys to look at it from outside, but this is a generalisation which would be justified only by a more comprehensive inquiry than has yet been undertaken.

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A good many other differences have been discovered or suggested between boys and girls and between individuals of either sex, but the differences we have mentioned are sufficient to show that boys and girls must be known and treated as unique persons with their own abilities and weaknesses. All education ought in the end to be individual education, though this is a very different thing from the education of separate individuals.

CHAPTER VIII

A BOY'S INSTINCTIVE DISPOSITIONS

THE fact that a boy grows as a unique individual person is not less important for psychological theory than it is for practical teaching. No discussion of the general principles of mental growth can do justice to the rich variety of individual differences. At the same time, we cannot hope to understand individual boys and girls unless we are guided by some knowledge of the general lines on which all normal boys and girls develop. In order to help a boy to learn easily and effectively we must take account of his special capacities and interests, but we must also keep before us the conditions which all successful learning must fulfil. We shall, therefore, in this and the following chapters consider in broad outline the course of a boy's mental growth, referring only incidentally to individual differences.

We have seen that as the structure of a boy's mind develops, his dispositions, including his dispositional interests, become wider and more definite and also more closely connected with each other. He was born, we must assume, able to feel the value of certain objects and situations, for only on this assumption can we explain his mental growth. We see that a baby soon shows an interest in his mother, and we infer that he had an inborn disposition to

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A good part of his mental structure. In the same covered or is afraid when his well-being seems to between is threatened, and soon comes to gaze at we have with what in an older child we should call and pity, and we conclude that he was born with corresponding dispositions. Such dispositions are called instinctive, because they have not been acquired in the course of the boy's experience but belong to his original mental structure. These instinctive dispositions were at first both vague and relatively independent of each other. As the child grew older and his mental structure developed, they continued sometimes to be active on their own account, but they also became elements in his wider and more rational interests. Even when the instinctive dispositions themselves supplied the chief motives for the boy's actions, they took more definite forms and led him to be active in more effective ways. When he felt fear, he was on most occasions aware of the cause of his terror and able to take steps to avert the danger. But unless his instinctive dispositions were absorbed in wider interests, they still led him to act impulsively with no deliberation. He was moved by forces inherent in his mental structure which called for no further justification. As an example of "the genuine voice of instinct," Prof. J. MacCunn cites a Scotch boy's answer to the Church Elder who caught him riding a stolen pony on the Sabbath. "Do you know that it is very wrong, my little man?" "Oh," was the impenitent reply, "I must do this whateffer."¹ Professor Burt's description of his young delinquents applies in some

¹ *The Making of Character*, p. 25.

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measure to all boys and girls, and indeed to all human beings. "The youth who gives way to a sudden gust of anger . . . the infant who goes wandering away through a maze of streets, are not deliberately prosecuting a carefully-thought-out design. They are urged, as it were, violently from behind, pushed blindly on by an unreasoning instinct to an unforeseen goal, half ignorant and wholly careless of the remote results of their semi-reflex impulses."¹

It follows that, as all reasonable teachers know, a boy's delinquencies are often the result of inborn dispositions rather than of deliberate wickedness or guile. "In Macaulay's time," says Mr. Graham Wallas, "a schoolmaster used to be guided by his 'common sense' and to intellectualise the whole process" of misbehaviour. "The unfortunate boys who acted upon an ancient impulse to fidget, to play truant, to chase cats or to mimic their teachers, were asked, with repeated threats of punishment, 'why' they had done so. They, being ignorant of their own evolutionary history, were forced to invent some far-fetched lie and were punished for that as well. The . . . schoolmaster of to-day takes the existence of such impulses as a normal fact. . . . He may even be able to extend this recognition to his own impulses and to overcome the conviction that his irritability during afternoon school in July is the result of an intellectual conclusion as to the need of special severity in dealing with a set of unprecedentedly wicked boys."²

¹ *The Young Delinquent*, p. 494.

² *Human Nature in Politics*, p. 28.

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One of the chief reasons why a boy's instinctive dispositions are so powerful and persistent is that they generally have a strong emotional side. When the boy acts under their influence he not only feels an impulse to act but also some strong emotion. Thus our disposition to escape from danger makes us not only run away but also feel afraid. So our tendency to fight anyone who thwarts us is intensified by our feeling of anger. Our emotional dispositions are among the strongest and most enduring parts of our mental structures. "You may change a man's opinions but not his loves and hates." Hence, when a boy gives way to some instinctive disposition in spite of his better self, it is generally because the emotion connected with it is so intense. In an outburst of anger he may do something which he afterwards bitterly repents and which in his saner moments he was quite incapable of doing. "In all but the most immature offenders," says Professor Burt, "it is the primitive emotion that provides the motive and the energy for crime."¹

It would, however, be a great mistake to suppose that a boy's instinctive dispositions necessarily lead him to do things of which we disapprove. They are the original motive forces of his life impelling him to actions which may be either good or evil. But as a boy grows older and feels responsible for his actions, he becomes aware that he must cease blindly to follow his instinctive impulses and must bring them under control. He must, therefore, resist the temptation to act merely because at the moment he feels driven to do so. "Count five and

¹ *The Young Delinquent*, p. 422.

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twenty, Tattycoram," said Mr. Meagles when the girl flew into a passion. While, however, a boy can restrain and gradually weaken a strong instinctive disposition, for example, to feel violent anger or abject terror, he cannot destroy it altogether. He may succeed in giving no outward expression to it, but it will continue to be an element in his mental structure and make its influence felt if for any reason his control becomes relaxed. Dr. W. H. R. Rivers tells us of officers who had learned at school to repress, not only expressions of fear, but the emotion itself, but when the strain of life at the front weakened their self-control, they were liable to suffer from morbid anxiety which led to irritability, loss of memory and disorders of speech.¹

The only sure method of control is to dissociate an instinctive disposition from the lower and less desirable interest with which it first came to be connected and to divert it to the service of some higher interest to which it gives zest and strength. Thus the tendency to feel fear takes a contemptible form if we are afraid merely of danger to ourselves with no thought of anything else. When, however, we are engaged in some adventurous enterprise, a subordinate sense of fear makes our experience more exciting. The bravest men, it has been said, are those who are most afraid and yet fight on.

The importance of instinctive dispositions is recognised by all psychologists, though they hold different views about what dispositions should be included under this head. It is, however, usual to distinguish certain important dispositions found in

¹ *Instinct and the Unconscious*, pp. 209 f.

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animals as well as all normal human beings, by giving them the special name of instincts. Instincts not only lead to characteristic forms of activity, but are usually connected with some definite emotion. Among the instinctive dispositions generally classed as instincts are those which lead us to feel fear and escape from danger, to feel anger and fight our enemies, to enjoy and seek the company of our fellows, to feel curiosity and explore new situations, to feel pride in ownership and acquire possessions, to be pleasantly active in making things, and to feel amused and laugh.¹

All a boy's instincts and other instinctive tendencies have their appropriate parts to play in his life. They can render essential service to his higher interests by imparting to them the zest which we feel when we are inspired by impulses derived from the structure of our minds. Even dispositions usually associated with undesirable activities can be transmuted into motive forces of worthy interests which thus gain a vigour they would not otherwise possess. For example, the disposition to be pugnacious has undoubtedly been a contributory cause of wars and untold misery, but Dr. McDougall has shown that it has also been one of the chief forces by which civilisation has been advanced, and that when an individual or a nation ceases to fight against wrongdoers, moral decay has already begun. He concludes that "in the nursery and the school righteous anger will always have a great and proper part to play in the training of the

¹ A fuller list is given by W. McDougall, *The Energies of Men*, pp. 97f.

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individual for his life in society.”¹ But a boy need not fight with his fists or a nation with its guns, and the disposition to hit back should be transformed into an eager readiness to combat injustice and oppression.

The process by which an instinctive disposition ceases to find its chief expression in irrational impulsive actions and becomes an element in higher interests is illustrated by the development of a boy's dispositions to share the feelings of other people, to accept their suggestions and to imitate their behaviour.

A disposition to have fellow-feeling or sympathy with people like ourselves is shown by quite young children, and our own feelings of sympathy often clearly show that they are to some extent instinctive. We do not say to ourselves, “My friend is glad and therefore I have reason to be glad too,” but our gladness comes, as it were, of itself. It is this instinctive character of fellow-feeling that makes it the essential basis of all harmonious social life, whether in the family, the school or the world at large. “No school group,” as Nunn says, “can be in a healthy moral condition where there is lack of community of feeling between teacher and pupils,”² and one of the problems of our national and international life is that of leading our people to feel that Germans and Hindoos and negroes are so like themselves, that they instinctively sympathise with them. Some boys have by nature a stronger tendency to

¹ W. McDougall, *Social Psychology*, Chap. XI. See also P. Bovet, *The Fighting Instinct*.

² See the whole passage, *Education*, p. 146.

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sympathise than is shown by others,¹ but the strength and range of a boy's sympathies can be increased. According to a rather artificial method of measurement, one group of Nursery School children were more "sympathetic" by half after six months' schooling, whereas in another school the gain was very small.

Further, instinctive sympathy provides us with experiences on which to base our moral judgments. As a boy grows older he cannot rest content to share other people's feelings without further question. He inevitably asks himself whether these feelings and the thoughts and actions they inspire are what they ought to be. But by making these feelings in some measure his own he appreciates by his own experience their splendour or their turpitude. One of the great benefits that a boy derives from reading history and healthy fiction is that of being brought into sympathetic contact with a variety of characters in diverse situations who awaken his admiration or his contempt. "For what is read of people is not merely understood ; it is always more or less lived, as we live with the people in a novel or on the stage. It serves for a rehearsal of realities to come ; it is a way to reverence and aspiration, and the only way of presenting evil with safety, as a thing contemptible or detestable, and not only liable to punishment."²

A boy sent to a special school on account of his violent behaviour gained a new outlook upon life

¹ See the types of children distinguished by Baumgarten in G. and L. B. Murphy, *Experimental Social Psychology*, p. 421.

² W. Mitchell, *Structure and Growth of the Mind*, p. 149.

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largely from his keen admiration for Robin Hood. He knew from his own experience what being a robber meant, but his own adventures in that line had ended in disappointment. From Robin Hood he learned to admire and imitate generosity and consideration for the weak, and in time he became noted for these qualities.¹

But, secondly, a boy tends instinctively to make his own the thoughts as well as the feelings of other people. He tends without further consideration to accept as true what other people tell him, and to do as they bid him simply at their command. Young children in particular are easily influenced by suggestion, especially in the form of prestige-suggestion, that is, suggestions coming from people presumably wiser than themselves. Thus a class of 20 children of average age eight were asked by their teacher what colour was the moustache of a man well known to them all. Nineteen of them named a colour, though the man had no moustache. When 22 children varying in age from nine to thirteen were asked the same question, 16 accepted the suggestion that the moustache existed. In another experiment a visitor to a class of 27 children between nine and twelve spoke to them for five minutes with his hat on. When, however, the class was asked, In which hand did Mr. B. hold his hat? 24 said either in his right hand or his left, in spite of the fact that the sight of a man wearing his hat in school was so unusual as presumably to attract attention.²

¹ I owe this example to Miss A. K. Pritchard.

² These examples are from Murphy, pp. 169 f. For another example see T. P. Nunn, *Education*, p. 147.

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These examples might be paralleled by others from the psychology of crowds, and both in schools and in politics an uncritical readiness to respond to suggestion may have deplorable results. This fact, however, only shows how necessary it is to make suggestibility more rational. It then serves an important purpose in our social life. We can live and work together only if, in the absence of evidence to the contrary, we are ready to accept other people's statements as true and their commands and advice as wise. If our instinctive response were one of disbelief or non-compliance, our intercourse with each other would be either an intolerable process of critical appraisal or a series of contradictions and disputes. In the same way, common action is rendered possible by our readiness to accept the plans and directions of other people. School and class discipline, for example, is maintained primarily by the willing acceptance of suggestions.¹

But a boy's tendency to adopt suggestions becomes a valuable motive only when he responds to a suggestion either because he regards the person making it as wiser than himself or because it appeals to him as being intrinsically right. In the former case we have an example of prestige-suggestion which plays an important part in all our lives by helping us to extend our worlds beyond the limits of our first-hand knowledge and experience. Most of our thoughts and opinions on subjects of which we have little first-hand knowledge are the fruit of

¹ On the social importance of suggestion see Graham Wallas, *The Great Society*, pp. 132 f.; and E. A. Ross, *Social Psychology*, Chaps. II-V.

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prestige-suggestion. Most of us accept Einstein's theory of relativity, not because we have examined and approved the reasoning on which it is based, but on the authority of scientists better able to judge than we are.

A boy's readiness to adopt prestige-suggestions marks a step forward in the process by which his instinctive suggestibility becomes subservient to his rational interests. It is reasonable for him to accept the statements and commands of a master he respects. But his acceptance ought not to be purely automatic. He ought to ask himself, at any rate in passing, whether what the master says is right, instead of simply responding to what he supposes the master desires him to think or do. Some boys take this step comparatively early, but others are more anxious to please than prepared to think for themselves. Many of us have had extraordinarily foolish answers from boys who supposed they said what we wanted them to say. The prestige-suggestion of a teacher whom the class admires may easily discourage independent thinking. Happily, most boys and girls have some independence of mind, as well as a sense of humour, and if we are tempted to be too dogmatic will instinctively dispute our statements or commands.

Fellow-feeling and suggestibility are closely connected with each other, and also with the further tendency to imitate the actions or behaviour of other people, and especially of those who are wiser or more skilful than ourselves. This third tendency also shows itself very early. Professor Valentine tells us that his baby tried to imitate sounds before

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it was two months old.¹ But it also constantly plays a part in our later lives. Thus, when a number of people were asked to copy some manuscript sentences in their own handwriting, practically all of them imitated to some extent the style of writing in the manuscripts they copied.² Such instinctive imitation is valuable because it leads us to share other people's lives and so to profit by their examples. By imitating what someone else does, we feel what it is like to do it, and so in some measure to be the person he is. Again, our tendency to imitate other people, unless there is some reason to the contrary, is the basis of the customs and conventions which play much the same part in our common life that habits do in our lives as individuals. Moreover, by following such customs we develop our sense of solidarity with others who comply with them like ourselves. By wearing his school cap a boy comes to feel a little more definitely that he and the other boys all belong to the same school.

But like the other tendencies we have discussed, the tendency to imitate, if merely instinctive, belongs to a low level of a boy's mental life. He may imitate bad as well as good examples unless his behaviour is inspired by some higher motive than that of doing what other people do. He may wish to acquire some skill which he sees some other person possess, as when he tries to bowl like the school professional, or in the highest form of imitation he may imitate the actions of some chosen hero in order to become more like him. The

¹ *British Journal of Psychology*, 1930, Vol. 21, pp. 105 f.

² Murphy, p. 178.

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tendency to imitate then forms part of his interest in achieving his ideal of right living and may develop into one of the highest motives of his life. The *Imitatio Christi* has its humbler and imperfect counterparts in many fields.

CHAPTER IX

FEELING AND EMOTION

IN the last three chapters we have been speaking chiefly about the growth of a boy's mental structure. We shall now consider more particularly the ways in which the boy is active when he thinks and feels and strives. As we have seen, he is active in all three ways when he feels and tries to achieve an interest, and we cannot discuss one kind of activity without reference to the others. It is, however, possible to pay special attention to his thinking or his feeling or his striving, and we shall begin by considering his feelings.

Speaking generally, we respond by our feelings to a situation in so far as we live it from within rather than look at it from outside. Each attitude implies the other, but one or other may dominate our whole response. If a boy sees a friend in trouble he may assume the attitude of an interested spectator, consider the causes which led to the trouble and perhaps suggest a remedy. Unless he felt some sympathy with his friend he would not understand his case, but his sympathy is subordinated to his desire to understand. If, however, the boy does not stop to think, but makes his friend's feelings his own, feeling indignant at the treatment he has received, or desolated by his distress, he responds to the situa-

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tion primarily by identifying himself with it and abandoning himself to the feelings it arouses. He does not try to be impartial, and takes little account of details which do not enhance the emotional value of the situation as a whole.

In so far as the boy responds to the situation by his feelings, his response is personal in a special sense. He is, as we say, affected by it. For the time being his life is changed by being life in the situation and not outside it. Moreover, his feelings, like instinctive impulses, come to him unsought. He can control them to some extent by refusing to act in accordance with them, or by looking at the situation from outside, or by deliberately turning away from it. But if he does any of these things he withdraws from his absorption in the situation. So long as he remains absorbed his feelings are bound to persist. In the same way, he can increase the intensity of his feelings or change their character only by altering the situation as it is for him. If, for example, the boy saw that his friend was foolishly distressed, the situation as he knew and lived it would be altered and his feelings would be modified accordingly.

This personal and involuntary character of our feelings gives them special importance in our lives. They tend to make us the people we are at that particular moment and, therefore, to determine what we think and do. They do so because they are not independent activities of our minds, but qualities of the interest we feel which to some extent transform it. When we say the boy felt sorry for his friend, we mean that his interest was strongly tinged by a feeling of sympathy and that

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this fact gave it its special character. It was a more integral part of the boy's personal life than it would have been if he had been interested in his friend as a cool spectator. His interest dominated his life at the moment, and made him anxious to take energetic measures to change the situation for the better.

It is, therefore, at least as important for us to lead our boys to have the right feelings as to help them to think truly and act wisely. Indeed, we cannot do the latter two things unless we do the first. A lesson will be effective only if the boys' feelings so qualify their interest that they become the kind of learners they ought to be.

The way in which our feelings tend to determine the character of our interests is illustrated by the fact that when we feel an interest in a new situation we begin by having a certain feeling even before we are clearly aware of what the situation is.¹ On rare occasions, indeed, our interest does not progress beyond this initial stage.

When some people come into a room with red paper on the walls they have a feeling of discomfort, without knowing the reason why. In the same way, a walk through the fields in spring may give us a feeling of exhilaration even if we take no particular notice of our surroundings. More often, however, our feelings determine the attitude or spirit in which we set about examining a situation and making changes in it. We have seen that a child's feelings towards a situation strongly influence all that he

¹ See A. N. Whitehead, *Process and Reality*, p. 227, and his *Adventures of Ideas*, pp. 315 f.

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thinks or does about it, and we are told that this is the case also with primitive peoples.¹ Similarly, though to a lesser extent, both boys and older people respond to situations under the influence of their first feelings.

If a new master comes into a class the boys feel pleasantly or unpleasantly affected, and then proceed to look at him more closely with friendly or critical eyes. If he makes a disagreeable impression they will try to justify their dislike by taking advantage of his weak points. If they like him at first sight they are ready to work well. Our minds often act in the same way when we recall things we have seen or heard. Professor Bartlett tells us that when a man is asked to remember something, very often the first thing that emerges is of the nature of an emotional attitude.² "The recall is then a construction, made largely on the basis of this attitude, and its general effect is that of a justification of the attitude." Bartlett gives many examples, of which the following is typical. A man had been shown a picture of the smiling face of a soldier wearing a military hat. Two months afterwards he said: "I have a general impression of a man coming out of bad weather. I should say he wore a trench cap."³ When the man looked at the picture he instinctively felt pity for the soldier, whom he thought of as suffering hardships in the war, and this feeling led him to recall the picture in a form which justified his pity. Our initial feeling is par-

¹ See P. Raden, *Primitive Man as Philosopher*.

² F. C. Bartlett, *Remembering*, p. 207.

³ *Op. cit.*, p. 54.

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ticularly important when we are faced by a situation calling for strenuous activity. A boy who has to do a difficult sum will set about it with zest and much more prospect of success if his attitude is one of courageous adventure.

The feeling by which we first respond to a situation may be either an indefinite attitude of which we are hardly aware or a strong and definite emotion. Our feelings are only slightly stirred if we pass a casual acquaintance in the street. They are vivid if we meet an intimate friend who has just recovered from a dangerous illness. But they always tend to belong to one or other of two classes. We either feel that the situation is one in which it is good for us to live, in which case we try to live in it more fully and to appreciate its value more completely, or we feel dislike to the situation as in some way detrimental to our lives, and then try either to escape from it or to change it in some way that will make it less repellent. The difference between these attitudes appears most clearly when our feelings are so strong that we may be said in a wide sense either to love or to hate the situation or the people or things in it. When we love a person we delight in being with him and in sharing his thoughts and feelings ; we live a life wider than our own and our whole being is enlarged, whereas in the presence of something we hate we either feel obstructed and our energies are lamed, or else we are stirred to hostile activity, which destroys our harmony with the world in which we live. "A love," says T. P. Nunn, "since it urges one to explore and develop the riches of its object, is a principle of growth, of

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expansion; a hate, since its aim is to destroy relations with its object is so far doomed to sterility.”¹ Hate, it is true, has its place as the correlative of love. If we love righteousness we must hate iniquity. A good bowler feels disgust at loose or ill-judged balls. But hate should always be merely the shadow cast by love and the general atmosphere of school life ought to be bracing rather than repressive, stimulating a boy's loves and not developing his hates. Praise has been proved to be more effective than blame as an incentive to successful effort,² and punishment should turn a boy from some evil way, not as an end in itself but in order that he may then begin to do better. Speaking generally, our discipline will aim at the positive achievement of right living rather than at the negative discouragement of wrong-doing.

We have so far been speaking of the initial attitude or feeling which is our first response to a situation. But as the situation and our interest in it develop, our feeling towards it undergoes a corresponding change. An unexpected goal may change a team's fear of their opponents into an attitude of hope, or the confidence with which they began the game may grow more assured as they find themselves playing well together. In particular, when we love or enjoy a situation, we live more and more fully in it, and, in Nunn's words, develop and explore its riches. A class reading a poem they like will enjoy and appreciate it more fully as their study of it proceeds.

¹ *Education*, p. 165.

² Murphy, *Experimental Social Psychology*, pp. 452 f.

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To live in a situation more completely and so make it a part of our own lives is a different thing from learning to understand it in detail, though some measure of understanding is obviously essential. Sometimes the chief result of our interest in what we see or hear or read is not a clear comprehension of its meaning, but a feeling or a general impression which is chiefly emotional. So, after reading *King Lear* or some other Shakespearean tragedy, A. C. Bradley suggests that we are left with the feeling or impression "that the heroic being, though in one sense and outwardly he has failed, is yet in another sense superior to the world in which he appears ; is, in some way we do not seek to define, untouched by the doom that overtakes him ; and is rather set free from life than deprived of it."¹

Such a feeling or impression may enable us to realise the essential meaning and value of the situation as a whole more fully than would any merely detailed study, and if we try to analyse or explain our feeling, the impression is likely to be partly lost. If a class is to enjoy a poem, we shall neither examine it too minutely nor ask them to explain in detail why they like it. We shall see that they know the meaning of the words and call their attention to important points they might otherwise overlook, but we shall do so only so far as is necessary to enable them to appreciate the poem as a whole. In any case, we shall concentrate on the poem and not lead them to analyse their own feelings and so make them less spontaneous.

¹ *Shakespearean Tragedy*, p. 324.

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But essentially important as a boy's feelings are, they are only one side of his life and must be kept under control by his intelligence and his will. Uncontrolled feeling is apt to lead us astray, because when our response to a situation is guided almost entirely by our feelings, we identify ourselves with the immediate situation and take little or no account of anything outside it. We therefore run a great risk of acting in ways which we should not have chosen if we had considered the wider bearings which gave the situation its true meaning. A boy's sense of loyalty to his friend may lead him blindly to share some escapade which he afterwards regrets. The remedy, as we have seen, is to withdraw from complete absorption in the situation, to stop and think, and to try to take an impartial view of the position. By suitable methods of teaching and discipline we can help boys inclined to give way to their feelings to form a habit of looking before they leap. But we have also to deal with boys who are particularly prone to feel some special emotion on the slightest provocation. For example, some boys are very easily discouraged and have a sense of helplessness or abasement which saps their energies. Or again, a boy may be only too ready to feel slighted. In such cases a cheerful word may help a particular situation, though general arguments or exhortations are not likely to have much effect on a feeling due to some disposition inborn or acquired. But to bring about a permanent improvement we must try to prevent the occurrence of situations calling focused a countervailing emotion. We must try to give

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helpless boy work he can really master, and commend any success he achieves, while the touchy boy will probably become less easily offended if he is diverted from thinking about himself to taking a keen interest in practical affairs.

The tendency of boys like these to feel certain emotions on every possible occasion is due to their having developed a disposition to do so which has come to be an integral part of the structure of their minds. The process is the familiar one by which a dispositional interest is developed by being active. Each time the boy felt hopeless he became a little more inclined to have the same feeling on the next similar occasion. In the same way a boy who has enjoyed a game of cricket is ready next time to enjoy it more. In this way the feeling side of his dispositional interest in cricket is developed by the actual pleasure he feels in successive games.

When our dispositional interest in a person or object involves a definite tendency to feel a strong emotion, such as love or hate, we are said to have a sentiment for that person or object. Sentiments in this technical sense are not feelings but dispositions to feel. They are aspects of dispositional interests and, therefore, belong to the permanent structure of our minds. As examples of sentiments commonly found in men, Mr. A. F. Shand mentions self-love, the love of parents or children, friendship, the sentiment for some game, patriotism and the love for some science or art.¹

¹ A boy's sentiments develop in the course of his own experience, generally without his consciously in-

¹ *The Foundations of Character*, p. 57.

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fluencing their growth. His most deep-rooted sentiments, such as those for his mother and for his cherished possessions, are inborn tendencies which can never be eradicated, though they may be transformed. A cruel mother may change her child's instinctive love to hate, but never to indifference. On the other hand, what we may call acquired sentiments can lose their strength as well as change their character. A boy's experience at school leads him to like or dislike his masters and his work, and he therefore develops corresponding sentiments. But his liking for a master may grow cold, or his dislike may give place to admiration as he grows able to appreciate qualities in the master to which he was before-time blind. Further, a boy can to some extent modify his own sentiments. If he dislikes a subject which he feels to be important and works hard at it in spite of his dislike, he will probably find himself feeling more kindly towards it or even taking pleasure in it. As a rule, however, when a sentiment has taken root in our minds it is very difficult to change it.

Partly for this reason, our sentiments play a very important part in our lives. For a sentiment vigorously reinforces the dispositional interests which it qualifies and tends to make them dominant in our minds. A boy's admiration for a friend or a master his devoted loyalty to his school or enthusiastical of some game may influence his life in various ways. A man's love for his country may lead always to give his life in its defence, and his love₂; G. F. make him a saint. A sentiment of hate₁ is discussed exert a dominating influence. In *Geomet.*

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Romola, Baldassare lived with the one aim of wreaking vengeance on the hated Tito.¹

To help its boys to develop right sentiments is, therefore, one of the school's most important tasks, and one lasting result of an effective system of education is to develop in the majority of its pupils certain sentiments which will give a distinctive tenor to their whole lives.

¹ Compare also R. Browning's *Soliloquy of the Spanish Cloister*.

CHAPTER X

PLEASURE AND SATISFACTION

IN the last chapter we spoke of the feelings by which a boy responds to the situations in which he lives. But there is one aspect of all feeling which we left for special consideration. Our experiences tend to be either pleasurable or painful, and if this side of them is prominent we say that we feel pleasure or pain.

It would seem that an experience is pleasurable when we are successfully active without being hindered, whereas an experience is painful when some obstruction prevents our activity from achieving its appropriate end.¹ When after a good dinner the process of digestion is proceeding without let or hindrance we have a pleasant feeling of bodily contentment, but if the process ceases to go on smoothly we feel discomfort or pain. So in our conscious activities success is pleasant and failure the reverse. Pleasure and pain are therefore our responses to situations experienced as fields for our own activities, and they signalise our personal success or failure. Our interest in any situation is coloured by pleasure or pain because we always

¹ See W. McDougall, *Energies of Men*, pp. 13 f., 122; G. F. Stout, *Manual of Psychology*, pp. 401 f. The question is discussed at length in A. H. Boulton Allan, *Pleasure and Instinct*.

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want to do something about it, and are wholly or in part successful or the reverse. But our interest is rarely, if ever, merely in our own personal success. The value of the situation is not, as a rule, confined to the opportunity it gives us of being personally active, but is due to the fact that there are things worth doing whoever does them, or worth knowing or admiring, as we say, for their own sake. We may eat a sweet or go to the pictures simply for the pleasure of doing so, but when we are literally or figuratively playing a hard game, the pains of knocks and bruises, or our own failures to score, count for comparatively little. Even when our own safety is at stake we may be so busy in taking the right measures that we do not feel how unpleasant the situation is. "On one occasion," says Dr. Rivers, "I was in imminent danger of shipwreck, while suffering from severe inflammation of the skin over the shin-bones, which made every movement painful. So long as the danger was present I moved about freely, quite oblivious of the state of my legs, and wholly free from pain."¹

To suppose that we are interested in a situation primarily because it causes us pleasure or pain is, therefore, a great mistake. A boy does not work hard or play hard simply for the pleasure of doing so, but because he is bent on doing what he feels to be important in itself. He wants to master this difficulty or help to win that game. The pleasure or pain he feels has its own importance, but it is incidental to his interest and not its source. It is true that in childhood interests tend to be narrowly

¹ *Instinct and the Unconscious*, pp. 57 f.

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personal and therefore pleasure and pain loom large, but even then "young and eager eyes are turned, not self-wards to pleasures or pains, but healthily outwards upon the rich store of interesting things which the world has to offer to the uncalculating hunger and thirst of instinct."¹

When the child becomes a boy, he is generally more interested in achieving tangible results than in gaining pleasure or avoiding pain. Unfortunately, however, some schools and some teachers are still influenced by the erroneous theory that the desire for pleasure and the dislike of pain are the chief motives of human action. It is still sometimes assumed that a boy finds his work unpleasant and will do it only if the consequences of not doing it are still more painful, or unless the pill is sweetened by some pleasant reward.² This assumption tends to develop in the boys a totally wrong attitude towards life, and it is happily being regulated to the limbo of outlived errors.

While, however, our feelings of pleasure and pain do not supply the main motives for our activities, we must not under-estimate their value. In the first place, the sense of being victoriously active, which is the essence of pleasure, gives zest and energy to our lives.³ We cannot say for certain that a school is a good one because its boys take pleasure in their work and games, but a school in which life is unpleasant is bound to be a bad one. For pleasure

¹ J. MacCunn, *Making of Character*, p. 22.

² See the "Fallacy of Hedonistic Penology" in C. Burt, *The Young Delinquent*, pp. 493 f.

³ See R. Bridges, *The Testament of Beauty*, Book IV, ll. 362 f.

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want, pain have an office to perform even in our most in pious interests. The pleasant feeling of being is r'cessfully active stimulates our energies and sustains our efforts.¹ We want to go on being active t'n that particular way, and to do the same kind of thing on another occasion. A boy who finds pleasure in doing sums is likely to do them well. Pain, too, has a value in that it calls our attention to our want of success. It may stop us from continuing a mistaken course or lead us to feel the reality of the obstacles or evils which confront us. Because the things most worth doing are nearly always difficult we cannot make much progress unless we suffer pain.²

Our feelings of pleasure and pain have thus an essential though subordinate place among the feelings with which we respond to situations in which we are keenly interested. But when we experience pleasure or pain we are concerned with our own personal well-being, not with the well-being of the world around us. We must, therefore, distinguish pleasure and pain from the feeling of satisfaction or dissatisfaction with a situation in so far as it is in itself satisfactory or the reverse.³ We may feel pleasure in an easy victory, but satisfaction

¹ See W. McDougall, *The Energies of Men*, pp. 158 f.; and for a philosophical discussion B. Bosanquet, *Value and Destiny of the Individual*, Chap. VI.

² Compare Bosanquet, *op. cit.*, p. 183. "In spite of the sincerest efforts to apprehend the depths of this paradox, the fact that the cross is the banner of our religion and our civilisation seems still to have far more meaning than we find it easy to grasp."

³ See B. Bosanquet, *Principle of Individuality and Value*, Chap. IV.

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in a hard-fought game even if we lose. We feel satisfaction in having done our duty, though both the process and the results may have caused us pain. The engine-driver who stuck to his engine up to the collision he foresaw, and so saved many lives, may well have felt satisfaction when lying in hospital, though suffering great pain.

Our feelings of satisfaction and dissatisfaction owe their chief importance to the fact that when we feel satisfied by a situation we live in it as being in some sense perfect, and by appreciating its perfection we come in some measure to share it. The boy who feels thoroughly satisfied with a good lesson or good game lives for the time being in a world in which things go right. If we read a book or poem which satisfies our idea of what it ought to be, we breathe a larger and freer air. By feeling satisfaction we make the good things in our world our own, while by our dissatisfaction we reject what is not good.

Very often our sense of satisfaction comes from our finding, when we have achieved some interest, that we have not only succeeded in accomplishing our purpose but have in actual fact made the situation more what it ought to be. When a boy has worked a difficult sum, he is naturally pleased with himself, but we often see him admiringly gloating over the result, not because it was his own work but because the completed sum is a work of art with a beauty or perfection of its own. Further, his satisfaction extends to the process by which the result was attained. The sum was not merely a finished product, but one which gradually took shape. The boy may delight in noting how certain

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figures cancelled out or how the method of working led logically to the right answer.

This example is typical of the way in which our satisfaction in achieving an interest is a satisfaction with the process as well as with the result. Indeed, the two are sometimes so closely connected that we can hardly distinguish between them. Our satisfaction, therefore, tends to make us want to repeat the process and develops our dispositional interest in so doing. The pleasure which comes from success was also an inspiring influence, but a feeling of satisfaction is still more effective in so far as it stimulates us to do what is valuable in itself. In the same way dissatisfaction deters us and weakens our disposition to do the same thing again in the same way.

When, therefore, we say that a dispositional interest is developed by becoming active, we assume that its activity is in some measure satisfactory or successful. If this is not the case, what we do does not make us more ready and able to do it again. The burned child dreads the fire. It is true that merely repeating an action which gives us no distinct feeling of pleasure enables us to perform it rather more easily, but it does not lead us to do it better. Improvement depends upon an interest in performing the action in a way that will enhance the satisfaction or pleasure that we have already experienced in doing it, or diminish the dissatisfaction we previously felt. If a boy misspells a word and you make him write it out a hundred times, you may make him able to write faster, but unless he wants to spell the word right he will not learn to do so.

PLEASURE AND SATISFACTION

Professor Thorndike found, in the course of an elaborate series of experiments, that when there was no interest in improvement the repetition of a situation 3,000 times did not result in any greater skill.¹

In the same way, we may do something a hundred times without forming a habit of doing it. For we form a habit of doing something when we come to do it in a certain way as a matter of course whenever the occasion arises. We do not have to think about it or make any conscious effort. But this implies that our way of doing it is so satisfactory that it does not occur to us to make any change. A few repetitions of a satisfactory action or movement may, therefore, lead us to form a habit, whereas if we are discontented with what we do we shall try to do it better. "One successful effort," says Professor Burt, "may make a habit; a hundred repeated failures may leave none."²

We sometimes speak of a habit of telling the truth or of being punctual, but in such cases we use the term habit in the sense of a permanent dispositional interest. We do not speak the truth without knowing what we are doing, nor perhaps without making an effort to tell it. But habits in the strict sense are automatic so far as our conscious life is concerned. They are part of the structure of our minds which enables us to achieve our interests although we are not aware of the part it plays in the interests we actually feel. A skilled pianist playing a piece of music makes use of the habits he has formed

¹ E. L. Thorndike, *Human Learning*, p. 70.

² *The Young Delinquent*, p. 527.

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of striking the notes with his fingers, but he does not attend to the ways in which his fingers move. Habits are the slaves in the household of which our interests are the masters. Each slave has a definite duty to perform at his master's bidding, and he always does it in the same general way adapted in detail to the requirements of the particular occasion. The pianist's fingers make their habitual movements a little differently according to the tune he plays.

So long as our habits keep their proper place as the servants of our interests, they perform important functions in our bodily and mental life. We have so many things to do, and our energy is so limited, that we could not get on at all unless we did a great many things by habit, and, therefore, without conscious effort. Again, skill of any kind generally presupposes serviceable habits. Thus a child learns to walk and to talk partly by his movements becoming habitual instead of being difficult.¹ In the same way we could not think if we had not formed an immense number of thought-habits.

As an example of a valuable habit, we may take that of seeing objects the right way up. The image on the retinas of our eyes is that of the object upside-down, but it would be very inconvenient for us to deal with objects if we always saw them standing on their heads. We have, therefore, formed a habit of inverting their images when we grasp their meaning, and so automatically see things standing on their feet. Professor G. M. Stratton tried the interesting experiment of wearing glasses which inverted his

¹ On the rôle played by habit in bodily skill, see T. H. Pear, *Skill in Work and Play*.

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retinal images, turning them the right way up. At first he saw objects upside-down, but by the end of a fortnight he had formed a habit of seeing them in the usual way.¹

Because we do not attend to our habitual movements, we do not feel definite satisfaction when we make them, though we may have a pleasurable sense of the machine being well oiled. Habits are therefore satisfactory or the reverse, not in themselves, but in so far as they help or hinder us in achieving the interests they subserve. Generally, however, when the habitual part of our activity fails to run smoothly, or to play its proper part, we feel displeased. We then pull ourselves up, like a pianist striking the wrong note, and attend to the ineffective movement which, therefore, ceases to be automatic. This is, however, a disturbing thing to do, and we are apt to prefer the lazy ease of acting in accordance with our habit to the exertion needed to change our behaviour and make it more effective. Thus a boy who has formed a habit of writing badly may continue to do so although he knows his writing is difficult to read. In particular, we all tend to think along our habitual lines instead of taking the trouble to make sure that we are thinking rightly. We let our prejudices and assumptions blind us to the truth.²

In such cases our habits become the masters instead of the servants of our interests, and we tend to rest content with a low form of personal ease with-

¹ *Psychological Review*, 1897, pp. 341 f. and 463 f.

² On the limits to the usefulness of habits, see the interesting discussion in Graham Wallas, *The Great Society*, Chap. V.

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Not enjoying the satisfaction which comes from doing right things well. But here, as always, to prefer pleasure to satisfaction is in the end fatal to our pleasure. Pleasure comes chiefly without being sought as the free and unasked reward of the achievement of right interests, and lasting happiness depends much more on satisfaction than on pleasure. "It is only a poor sort of happiness," says George Eliot's *Romola* in a well-known passage,¹ "that could ever come by caring very much about our own narrow pleasures. We can only have the highest happiness, such as goes along with being a great man, by having wide thoughts and much feeling for the rest of the world, as well as ourselves; and this sort of happiness often brings so much pain with it, that we can only tell it from pain by its being what we would choose before everything else, because our souls see it is good." It is this general attitude towards life, expressed less in words than in the daily round of work and games, that makes a school a happy place and inspires its boys with a feeling that life is good because it is so full of effort and adventure.

¹ *Romola*, Chap. LXXII.

CHAPTER XI^o

PERCEIVING

OUR discussion of the feeling side of a boy's interests leads us on to consider his interests in knowing more about the objects by which his feelings are aroused. For, obviously, a boy cannot feel an interest in any object unless he knows something about it, and he may be primarily interested in getting to know it more thoroughly.

The general way in which a boy increases his knowledge of an object or situation is by thinking about it. But if the object is actually before him and he can see or feel or hear or smell it, he thinks about it mainly by interpreting what his senses tell him. This kind of thinking is called perceiving, and it is this process which we shall now consider.

At first sight it might seem that perceiving is a very simple matter. When we see a table, we just see it, and there is little more to be said. In fact, however, it is so difficult to determine exactly what we do when we perceive an object that psychologists and philosophers are by no means agreed about the answers to the various questions which the process raises.¹ There are, however, some points of import-

¹ On some of these questions, see H. H. Price, *Perception*; C. Spearman, *The Nature of Intelligence*, Chaps. XIII and XIV; W. Mitchell, *Structure and Growth of the Mind*, Chaps. IX to XII.

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ance for our purpose which we can consider without entangling ourselves too deeply in contentious issues.

We must notice in the first place that when we perceive an object—for example, see a table or hear a spoken sentence—we do two different though connected things. First, our eyes or ears react to some stimulus from the world outside, to the light coming from the table or the movement in the air conveying the speaker's voice. We then have certain sensations or sense impressions which make seeing or hearing possible. These sensations, however, do not of themselves enable us to know and understand what it is that we see or hear. For, secondly, we think about what our senses tell us, thus giving a meaning to what we see or hear. We then see actual objects or hear intelligible sounds.

We can understand the difference between these two sides of perceiving, if we take the case of men in an engineering workshop who can take messages over the telephone, because they do not listen to the great noise round them. They are not deaf, and hear the hammering with what we may call their outward ears, but they do not think about it, whereas they listen to and understand the much slighter noises which they hear when telephoning. In the same way, Professor Bartlett tells us of a boy who could hear perfectly well so far as his sensations went, but who, owing to an operation, did not attach any meaning to spoken sounds and so did not hear them in any effective sense.¹ We emphasise the thinking side of perceiving when we speak of looking,

¹ F. C. Bartlett, *Remembering*, pp. 188 f.

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or observing in contrast to merely seeing, and of listening as an intensified kind of hearing.

As an example of the way in which we think when we perceive an object, we will suppose that we are looking at a house. Our interest in the house leads us to be active in observing it more closely and in grasping the meaning of what we see.¹ We are able to interpret what our eyes tell us because we have a general idea of what we are looking at. We can recognise a house when we see it. We at once think of it as an actual or possible home in which people live. Our idea is, therefore, a kind of framework into which we can fit what we see. Further, our interest on this particular occasion makes us look at and think of the house from a definite point of view. We may be specially interested in its style of architecture or in considering whether it is a suitable one for us to buy. Our idea of it is, therefore, coloured by our attitude and special interest. Consequently, we attend more particularly to certain features of the building and take less account of others.

As we look, our idea of the house becomes more definite. We take note of its general appearance, its windows and door and chimneys. Our idea thus develops as we incorporate in it the various things we see. In the end, we gain a clear and coherent thought of the house, which within limits reproduces the house as it really is.

Our thought of the house, however, includes more than we actually see. We may see only the front of the house, but we think of it as having sides and a back. We think of the door as providing an entrance

¹ See Chap. II, pp. 116 f.

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to an invisible hall, and so on. By making use of the knowledge we already possess, we think of the house as an object in our familiar world of persons and things, and it is the place of the house in this wider world that gives it its meaning and value for us.

As another example we may take the way in which we read words or sentences.¹ Suppose we are reading a sentence in which the word *astronomical* occurs. We come to the word with an interest in knowing its meaning, and this governs our whole process of perceiving it. If we were interested in the type in which the word was printed we should look at it from quite another point of view. Further, our idea of the word includes the fact that it is a word in an intelligible sentence and must, therefore, make sense with the other words. We have, therefore, a general pattern into which the word must fit. With this pattern in mind we glance, as experiments show, at the word as a whole, noting more particularly its first letters and the top half of the others. By the help of these indications we make a shot at a meaning which fits into the sentence. If it does so we feel satisfied that our idea of the word is right.

This is an example of the way we perceive in comparatively simple cases. But suppose we were trying to read a word of which we could not satisfactorily guess the meaning, perhaps in a letter written by a friend whose writing is illegible. We should begin, as before, with a tentative idea of what the word meant. But instead of noticing only its outstanding features, we should have to examine its letters and

¹ See H. B. Huey, *The Psychology and Pedagogy of Reading*, Chap. IV.

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strokes separately, trying to make out what the letters were, perhaps by comparing them with letters in other words. If we were able finally to decide that the word must be so and so, we should have developed our idea of the word into a thought which combined all the evidence in a satisfactory conclusion. We might, however, have to give the word up, or remain in doubt as to which of two or more meanings was correct. In any case, we should have made a strenuous effort to develop our idea by correcting and enlarging it to include all the facts in an intelligible whole. This is perceiving on the highest level, and it is a form of knowing which boys should practise, for instance, in their science lessons.

Most of our perceiving, however, is done in a much less elaborate way and the process is almost automatic. We see a table without in the strict sense looking at it. A glance is enough to show us what the object is, and we do not inquire any further. This kind of seeing¹ enables us to deal with our familiar surroundings without giving too much time and energy to perceiving them exactly. Occasionally we make mistakes. We may see the back of a man whom we hastily take to be a friend, and find when we address him that he is a total stranger. But, on the whole, this easy kind of perceiving answers our practical purposes well enough.

Here, however, we are more particularly concerned with perceiving of the purposeful kind when we take pains to make sure that we really grasp the

¹ Called by Price, "Perceptual Acceptance." See his *Perception*, pp. 140 f.

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meaning of the object we perceive.¹ A boy perceives in this deliberate way when he feels a strong interest in knowing and appreciating the object he observes. If his interest is slight, he will perceive carelessly and unintelligently. "Thousands of schoolboys to-day," says Mr. J. E. Barton,² "schoolboys whose terminal reports for Latin or Mathematics are written more in sorrow than in anger, can detect with a single glance the nicer points of a motor-cycle, a locomotive or an aeroplane. They see such things, not only with exact vision, but with a zest that is fundamentally (I feel sure) the zest of the artist."

We do not, however, take a keen interest in things unless we feel that they play an important part in the real world. Mr. Barton's boys perceived motor-cycles so much more clearly than figures in arithmetic chiefly because when they looked at a motor-cycle they felt they were seeing an object in the real world, which had a value in daily life. On the other hand, if they were doing a sum which had no particular bearing on any of their main interests, the figures in it belonged to a shadowy world in which things were only half real.³ For when we hear or see something which has little meaning for us, we give it only slight attention or none at all. The loudness of a noise or the bigness of an object may attract our attention for the moment, but unless we can fit it into the scheme of things, and so give it a fuller meaning, we soon turn to something we feel to be

¹ Compare Price's "Perceptual Assurance," *op. cit.*, pp. 172 f.

² *Harrow Lectures on Education*, p. 83.

³ We must apologise to teachers of mathematics for speaking of boys who were so badly taught.

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more interesting. Merely shouting at an inattentive class will not make them listen. A few quiet words which they feel really matter will be much more effective. It follows that our failure to perceive some object rightly is generally due less to our eyes or ears not being sufficiently acute than to our lack of attention to what they tell us. We shall, therefore, lead our boys to form a habit of accurate observation, not by trying to improve their eyesight or their hearing so much as by giving them interesting objects to observe of which they feel small details to be important.

We said that the boys observed motor-cycles so successfully because they saw them as objects in the real world. They did so for two reasons, among others. In the first place, the cycles resisted the pressure of their hands when they tried to lift or push them. The boys, therefore, thought of them as solid and heavy. It would seem, indeed, that we perceive things as real largely because we are ourselves physically active when we perceive them, and they in turn either do or do not respond to our movements.¹ This is most clearly the case when we handle things and feel them resisting our pressure. We then appreciate their shape and weight and texture, and, therefore, their reality as material things, more vividly than if we only see them. We can also turn them round and so make our knowledge of them more complete and definite.² Artists, for

¹ See G. F. Stout, *Mind and Matter*, Book IV, Chaps. I and VI, esp. p. 233.

² Thus carrying out the essential process of perceiving which Price calls "Specifying the Unspecified," *op. cit.*, p. 174.

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example, often turn upside-down the pictures they are painting in order to make sure that the objects in them are in the right proportion. For this and other reasons, young children, and also older boys, should handle things as well as see them. For the young child, says Professor Burt, "immediate contact, and the experience of movement, weight, resistance and relative position, ascertained through so-called touch, are of supreme significance and interest."¹ We may add that boys gain such experience most fully when they are making or using things.

Suppose, however, the boys did not handle the motor-cycles, but only looked at them. They still saw them as real because they saw them as things that could move, that is, as active and not merely passive objects. It is a remarkable fact that even when we look at stationary objects we are apt to see them as about to do or not to do something. A gun looks as if it might go off. A rock looks as if it would resist any attempt to move it.² When, however, we are looking at situations in which nothing is happening, this impression of possible movement, and therefore of reality, is comparatively faint. We saw in an earlier chapter that such situations have in consequence little interest for young boys. But if we see actual movements, we vividly appreciate the reality of the object or situation. Boys will look with enthusiasm at a model pump which really works when a diagram leaves them cold. They watch a live animal intently, whereas a picture of it is much less exciting.

¹ *Report on the Primary School*, pp. 260 f.

² See H. H. Price, *op. cit.*, pp. 161 f.

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But even if we have made the most skilful arrangements for a keenly interested class to observe some object or experiment, it must not be assumed that they will see just what we want them to see, or perceive things as they really are. Teachers know that in writing an account of what they have seen, some boys will say that they have seen what was not there, and others will have missed important points or misinterpreted what they saw. Each boy saw only what his interests led and enabled him to see. For each formed a first impression which influenced his whole process of perception, and his temperament and character helped to determine both what he saw and the way in which he described it. The effects of these individual differences are illustrated by a series of experiments carried out by Professor F. E. Bartlett. "The experiments," he tells us, "repeatedly demonstrate that temperament, interests and attitudes often direct the course and determine the content of perceiving. The cautious and the rash, the student and the man of affairs, the subject doubting and the same subject confident, never perceive alike, though they may be faced by exactly the same situation, so far as external features go." Thus, when a subject was asked to draw or describe what he had seen, "the confident subject justifies himself . . . by setting down more detail than was actually present; while the cautious, hesitating subject . . . finds justification by diminishing . . . the details presented."¹

It is neither possible nor desirable entirely to eliminate the effects of a boy's personal character-

¹ *Remembering*, p. 21.

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istics. No boy can see all there is to see, but he may see something other boys have missed. It is, however, important that a boy should form the habit of correcting his impressions by making sure that they accord with what he sees when he looks carefully, and that he should be ready to modify his ideas whenever the facts demand it.

What we perceive is influenced not only by our own interests, but also in varying degrees by the surroundings or background against which we observe it. We hear a word as part of a sentence, and the word has a rather different meaning according to the meaning of the sentence as a whole.¹ Or, again, to borrow Arthur Sidgwick's example, an anti-macassar looks one thing on the back of a chair and another thing on the back of your best friend going up to read the lesson in your College Chapel. To give an instance of a different kind, the lines AB and XY are of equal length, but because we see them as parts of different figures AB looks longer than XY.



It follows that it is not enough to call a boy's attention to the details of a specimen or of a printed

¹ Or as in puns the same sounds may have quite different meanings.

“ They went and told the sexton,
And the sexton tolled the bell.”

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sentence unless he grasps their significance in an intelligible whole. Boys learn to read better by reading sentences rather than isolated words, and if they read a word wrong you may say, "Spell it," but more wisely, "Does that make sense?"

It is clear from what has been said that the chief difficulty in perceiving a complicated object is to organise what we can see or hear into an intelligible whole and so to grasp its comprehensive meaning. This difficulty is illustrated by the limited extent to which children of various ages understand the meaning of a picture. Experiments show that most children at the age of three pick out a few persons or objects in it without seeing the picture as a whole. At the age of six, most of them can specify the action or situation the picture represents. "They are pulling a cart." "An old man asleep." They see the picture more or less as a whole, but without taking much account of its background. Not until the age of twelve are most boys able to interpret the picture by giving due weight to the background which is inferred but not actually seen. "They're moving house." "The man is in trouble."¹

It probably demands more effort to understand the meaning of difficult sentences we hear than the meaning of things we see, and partly for this reason boys are apt to fall into a habit of passively accepting the obvious meaning of what the teacher says without taking the trouble really to understand it. Listening properly is hard work, for it involves on the one hand listening very carefully, and on the

¹ See C. Burt, *Mental and Scholastic Tests*, pp. 26 f. and p. 132.

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other making sure that we understand what we hear. We have to listen very hard in order to follow a speech in a foreign language with which we are not very familiar. When, however, we have succeeded in really grasping the meaning of the object we perceive we have the sense of satisfaction which always follows the achievement of an interest. But in this case our satisfaction takes the form of feeling that the object is in some sense beautiful as well as real. We see or hear it in the right perspective with all its details falling into place in a harmonious whole. This was the case with Mr. Barton's boys who saw their motor-cycles with, he says, the zest of artists. So Professor Bartlett says that in his experiments "Again and again a complete figure was treated as more 'simple' in construction than the same figure in an incomplete stage. Something that must be called 'an impression of completeness'—or even of 'rightness'—seemed to spread over the whole perceptual situation, setting the attitude of the subject into one of ease and finality."¹ It may be suggested that when we give boys something to observe, they will not have really perceived it, and probably will not remember it, unless they have the sense of rightness. If their faces light up we know that they have really grasped its meaning.

It is hardly necessary to emphasise the part which the perception of material things plays in a boy's mental growth. By seeing and hearing things aright, he both widens his experience of the world about him and also realises actual things and

¹ *Op. cit.*, p. 25.

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actual facts as fixed and given, what we are here think or wish. Happily Whitehead's longer true of present-day schools that scale, we will Garden of Eden Adam saw the animals on the solar named them; in the traditional system on a vague named the animals before they saw them."¹ found it. in an age of much talking and book-learning we finite, still apt to under-estimate the importance of first-hand experience, which is the basis of all scientific and scholarly thinking as well as of all craftsmanship and art. "First-hand knowledge," says Whitehead, "is the ultimate basis of intellectual life. To a large extent, book-learning conveys second-hand information, and as such can never rise to the importance of the immediate practice." He adds, "What the learned world tends to offer is one second-hand scrap of information illustrating ideas, derived from another second-hand scrap of information. The second-handedness of the learned world is the secret of its mediocrity. It is tame because it has never been scared by facts."²

How far Whitehead's judgment of the learned world can be sustained it would ill become us to inquire. Unhappily, he describes only too truly the methods of teaching characteristic of some schools in the past.

¹ *Science and the Modern World*, p. 278.

² *Aims of Education*, p. 79.

CHAPTER XII

THINKING

WHEN we perceive an object, we think about it as actually before us, but we can also think about things we are not perceiving and so pass beyond the limits of the particular situation in which we find ourselves at the moment. We can think about distant objects, about past and future events, about such unseen realities as the law of gravitation and the claims of duty, and even about fairies and golden mountains which have no place in the world of actual facts.

Much of what we said in the last chapter about the process of perceiving holds good of any kind of thinking. Whenever we think, we are inspired by an interest in understanding the situation, and our interest helps to determine the situation about which we think. Again, thinking, like perceiving, is not a purely intellectual process, but an effort to achieve an interest which involves some elements of feeling and desire.

Just as we perceive most things as a matter of course and without conscious effort, so most of our thinking is of the same semi-automatic kind; but sometimes we have to think hard in order to understand some situation of which the meaning is not obvious to us, and it is with

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this purposeful kind of thinking that we are here concerned.

As an example of thinking on a large scale, we will suppose that a class is having a lesson on the solar system. To begin with, the boys have only a vague idea of the sun with the planets going round it. As the lesson proceeds this idea grows more definite, and becomes the thought of an organised system of things. Each of the planets gains an individuality of its own. Jupiter is the largest and has its moons. Saturn is the next in size and is remarkable for its rings. But each planet takes its place in the whole system. The length of its year depends upon that place, and so on. If the lesson is successful, the boys finally grasp the solar system as an organic whole in which each detail has an importance of its own and at the same time plays its part in the whole system according to general laws. Each boy has then developed his idea of the solar system until it reproduces in imperfect outline the system as it actually is. His personal world has thus come to include a solar system which, within the limits of his knowledge and intellectual grasp, is the actual solar system rightly understood.

The process is essentially the same as that illustrated in our discussion of perceiving, but in this case the boys think mainly about things they do not actually perceive. If the master showed them diagrams or models, it was only to help them to think about the unseen objects. The boys made the solar system part of their personal worlds, not by looking at it and interpreting what they saw, but by building it up in their heads, the place of sights

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or sounds being taken by mental images and concepts which become active in their thinking. But in order to understand how mental images and concepts provide materials for our thinking, we must say something about their nature and how we come to use them.

When we see or hear what impresses us, the activity of our minds leaves us with a tendency to see or hear the same thing again. We cannot do this with our bodily eyes or ears, but we often do it, as we say, in our heads. We see a mental picture, or mental image as it is called, of the motor accident we witnessed, or we find a tune "ringing in our ears." In the same way, when we think of some friend or familiar object, we may do so by means of a mental image which is part of the structure of our minds and then becomes active.

A mental image is, therefore, a thought of something we have previously seen or heard, and we can make use of it in much the same way as we can use the thought of an object we are actually perceiving. Mental images sometimes bring objects and situations before us almost as vividly as do actual sights and sounds, and are, therefore, particularly helpful when we are thinking of individual things that have been or can be perceived. On the other hand, they may be quite vague and only symbolise an object without giving us a clear picture of it.¹

Children, as we have seen, are keenly interested in objects they perceive, and also think mainly about individual things. Much of their thinking is, therefore, carried on by means of vivid mental

¹ On mental images, see F. C. Bartlett, *Remembering*, Chap. XI.

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images. As they grow older they make more use of words, but boys and girls continue to employ mental images to a greater extent than they are likely to do as adolescents. Dr. Rusk found that the boys and girls he tested continued to use a large variety of mental images, both vivid and rich in details, until they were over fourteen.¹ It is important to remember that the teacher probably thinks chiefly by the use of words, and because his boys do not think in that way he may speak a language which they can only partly understand. "During the later stage of primary education," says Professor Burt,² "the majority of pupils appear to be visualisers. They imagine things with the mind's eye. If the teacher could penetrate into the consciousness of such a child, he would find the child's thoughts unrolling themselves before him rather like a cinematographic film. Within the teacher's mind the film is probably a talking film, and the film itself is less clear than the talk—the chief talker being the teacher himself. And the teacher is too apt to talk out his thoughts before the child, much as he talks them over to himself, without troubling to call up concrete visible pictures."

But while mental images enable us to think about many things which we are not actually perceiving they do not give us all the help we need. Most of us cannot form useful mental images of *honesty* or *gravity* or of such connecting links as *but* or *therefore*. As a rule, the more we want to

¹ *Brit. Journal of Psychology*, 1912.

² *The Primary School*, p. 264.

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think about general principles and the connections between things, the less can we depend on mental images. Moreover, just because mental images tend to make our thinking vivid they also tend to lead us to think of things as if we were mentally looking at them through coloured glasses, for our mental images are tinged by the experiences to which they owe their origin and especially by the emotions connected with these experiences. If we mentally picture a man we dislike we shall probably think of him as ugly. Again, mental images are apt to retain features which do not belong to the situation we are trying to organise. An extreme example is that of a young girl who had been interested in her teacher's description of the life of a typical Athenian boy. She formed a mental image of the boy, and when the teacher went on to describe his clothes she interjected: "No, he did not dress like that. I can see him in an Eton suit." An even more serious weakness of mental images is that they tend to combine or follow one another simply because they are associated with the same interest or emotion, not according to rational principles. A boy who was a devotee of football saw a small dog run on to the field at a critical moment of a cup-tie match. When he afterwards pictured any football match he was apt to see the dog, even though it did not belong at all to the situation he was recalling. If mental images are not connected in this way they are apt to follow one another like separate links in a chain instead of combining to form a coherent situation. To encourage a class to visualise the situations described in a poem may, therefore, hinder

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rather than help them to appreciate the poem as a whole.

These limitations of mental images make it all the more important that children as well as older boys and girls should be helped to make full use of the second way of thinking about things not actually before them, that is by thinking of them by their names. The name of a thing is a sound so closely associated with it that when we hear or make or think the sound, we think not of the sound but of the object which the sound means or represents.

By using words as the names of things, we are able to think of a great variety of things of which we can form no mental images. When we know the name of any object of thought we feel that we have got a mental hold on the object and can think of it whenever the need arises. Children ask: What is it called? and when they are told the thing's name they feel that it has become a definite new item in their personal world. Further, words have the great advantage of being communicable to other people. When we say *chair* we make the sound knowing that our hearers will think of the object of which the sound is the name. Words also differ from mental images by being the names of the things themselves without reference to any particular experience of our own. Their meaning, as we shall see below, varies to some extent, according to the interest in the service of which we use them, but a word is always the name of the same thing, thought of as belonging to the real world. When, therefore, we think of things as they are in themselves and not as we experienced them, we make use of words rather

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than of mental images. In exact descriptions of things and in reasoning about them we habitually use words, partly because we can then tell our thoughts to others, but partly also to make our thinking less personal to ourselves.

It follows that the scope of a boy's thinking depends not only on the variety of the mental images at his command but also upon the number of words he can intelligently use. It has been calculated that an uneducated man with narrow interests employs only about a thousand words, whereas a man of wide culture may use a hundred times as many.¹

But, essential as words are, they have their characteristic dangers. A word has value only in so far as it enables us to think of the thing it signifies, that is, in so far as it has a meaning. But it is disastrously easy to use a word without any clear notion of what it means. A word is a definite and comforting thing, like the blessed word Mesopotamia which sounds so grand whatever it may mean. Further, even if a word has a meaning for us, it tends to be a narrowly fixed meaning, and when we think in words we are apt to fit the situation to the meaning of the words, instead of widening their meaning to fit the situation. We give a dog a bad name and then proceed to hang him without troubling to inquire whether he is really bad. "Words," as Spearman says,² "serve man as mental havens. In thinking, he flits from one to another as children do from post to post in the game of touch wood. If he remains savage, he may regard them as magical spells.

¹ C. Spearman, *The Nature of Intelligence*, p. 265.

² *The Nature of Intelligence*, p. 265.

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Should he climb the pinnacle of civilisation . . . he may outright worship them." We may think, for example, of words like *liberty* or *democracy* or *our rights* or *nationality*.

In proportion as we read and talk about things remote from our direct experience, we are specially liable to use words without realising their meaning. Most of us, when we see in our morning paper that there was an earthquake in Japan, are more or less like Tennyson's Lotus Eaters to whom "clanging fights and flaming towns, and sinking ships and praying hands" were "like a tale of little meaning though the words are strong." But the tendency to use words as if they were important in themselves is particularly strong in boys and girls, who do much of their learning by reading or listening to their teachers. Moreover, the meaning of some words used by a teacher or in a book may be difficult to grasp, and a natural weakness leads the boy to repeat them like a gramophone. But in so far as a boy uses words in this unintelligent way, the thoughts for which the words stand are vague and ineffective. They are not living thoughts of things as playing a real part in the world, but thoughts of shadowy meanings which flit like disembodied shades across his mind. It is of such concepts that Whitehead speaks in his diatribe against what he calls inert ideas. "Education with inert ideas," he tells us, "is not only useless; it is, above all things, harmful." And yet "except at rare intervals of intellectual ferment, education in the past has been radically infected with inert ideas. Then, alas, with pathetic ignorance of human psychology, it has proceeded by

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some educational scheme to bind humanity afresh with inert ideas of its own fashioning.”¹

For neither mental images nor words are valuable in themselves. They are means by which we think of the details or aspects of a situation which we want to understand, and we use them to enable us to organise the situation. We have them at our command as elements of our mental structure, and we employ them in the service of our interest at the moment. We have, for example, a disposition to think of a table by its name. This disposition is our concept² of a table, that is, our power and tendency mentally to hear or pronounce the sound *table* not as a mere sound but as signifying a particular piece of furniture. When we think of a table this concept becomes active, but always as part of a process of thinking. So if a boy has acquired the concept of carbon dioxide he does not think carbon dioxide for the mere pleasure of doing so, but in the course of his efforts to understand some chemical process. A concept, therefore, becomes active not as a fixed immutable thought, but as one element in a living process of thinking. “A permanently existing idea,” says William James, “which makes its appearance before the footlights of consciousness at periodical intervals, is as mythological an entity as the Jack of Spades.”³ For a concept, while always

¹ *Aims of Education* (Williams & Norgate, 1929), p. 2. The whole book is described by its author as “a protest against dead knowledge, that is to say, against inert ideas.”

² The term *concept* is used by some writers for our actual thought of the table.

³ *Principles of Psychology*, Vol. I, p. 236.

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a concept of the same object, becomes active in rather a different form according to the particular point of view from which the object interests us. Our concept of Father Christmas takes different shapes when we are telling a story to children and when we are discussing folk mythology. Further, we have seen that our attitude and feelings colour and modify our thinking, and when a concept becomes active it is much more than a bare thought of something. When we speak a word the tone in which we utter it is hardly less important than its dictionary meaning. "It is his tone, for example, and not what the carter says, that speaks to his horse."¹ In the same way, when we think a word we think it coloured and enriched by feelings and associations. So William James describes the process of thinking as a river in which "every definite image in the mind is steeped and dyed in the free water that flows around it. With it goes the sense of its relations, near and remote, the dying echo of whence it came to us, the dawning sense of whither it is to lead. The significance, the value, of the image is all in this halo or penumbra that surrounds and escorts it—or rather that is fused into one with it and has become bone of its bone and flesh of its flesh; leaving it, it is true, an image of the same *thing* that it was before, but making it an image of that thing newly taken and freshly understood."²

Again, our concepts of objects are, as it were, embedded in the interest they serve by being con-

¹ W. Mitchell, *Structure and Growth of Mind*, p. 173.

² See on the whole subject Stout, *Manual of Psychology*, pp. 148 f.; Spearman, *Nature of Intelligence*, p. 275 f.

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nected with each other by links represented by little words such as *and*, *or*, *but*, *to*, *for*, which serve to show the way in which our thinking combines the more substantial objects of our thought. To quote James once more: "There is not a conjunction or a preposition, and hardly an adverbial phrase, syntactic form or inflection of voice, in human speech, that does not express some shading or other of relation which we at some moments actually feel to exist between the larger objects of our thought."¹

The process of thinking is, therefore, a living process of developing our idea of a situation or subject as an organic whole. Boys do not think or learn by adding one separate bit of knowledge to another but by bringing order into a situation which gradually grows clearer. Their minds do not work like sewing-machines, adding stitch to stitch, but more like artists painting pictures.

This does not, however, mean that we can think about things according to our own sweet will. Our interest in thinking is to arrive at the truth of things, that is, to reproduce in thought things as they really are. We must, therefore, organise our mental images and concepts on the same principles as those which hold the real world together. A situation about which we think, the solar system for example, has a certain plan or order or harmony which makes it what it is, and this plan we must accept as the test and basis of our thinking. If during the lesson on the solar system it occurs to a boy that because the moon looks big it must be larger than the planets, he rejects the idea as inconsistent with the plan of the

¹ W. James, *op. cit.*, Vol. I, p. 245.

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real system. The order or plan of a situation is therefore revealed to us for our acceptance and appreciation, not created by ourselves.¹

What we may call the ground-plan of the world is represented by the fundamental laws of logic, and our thinking, therefore, must before all things be logical. Muddled or inconsistent thinking is bad thinking. But our thinking may be logical in a narrow, formal sense and yet fail to do justice to the subject about which we think. A merely logical analysis of the meaning of a poem does not carry us very far. Every subject about which we think has an harmonious order of its own which expresses its essential character and is more akin to beauty than to merely logical consistency. If a boy thinks of the bat he wants to buy he must think clearly and logically about the qualities it should possess, but he also thinks of the bat as having a character and individuality of its own. He thinks of it, therefore, as being in a wide sense a thing of beauty, one that it is a joy to look at and possess. An efficient machine has this kind of beauty no less than a picture or a poem or a satisfactory theory. Our thinking should, therefore, reproduce the particular kind of harmonious order by which the details come to play their proper parts in the whole subject of our thoughts. Even a fairy story, in which the laws that govern the world of actual facts do not apply, must have an harmonious

¹ Compare Professor N. Kemp Smith, "A rationality or order . . . discloses itself ; an order which is richer and more wonderful than any unassisted reasoning could ever have anticipated, if called on to invent what it would desire to discover." Quoted by D. M. Emmet, *Whitehead's Philosophy of Organism*, p. 196.

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order of its own. A giant must do the kind of things which are appropriate to a giant. If we think about something which in fact lacks harmony, a table with a broken leg, a case of cruelty, an ugly picture, or a theory inconsistent with the facts, we must realise its defects by comparing it with the harmonious whole it ought to be. In particular, when we have to decide a difficult question or see how some situation can be improved, our thoughts must be guided by our idea of a possible solution which is not merely logically consistent but which we feel has a certain rightness or beauty of its own.¹ While we all necessarily organise our own worlds in general agreement with fundamental laws of logic, we sometimes think illogically when we fail to see how these laws apply. But it is against the harmonious order of things that our thinking most often sins. Our bad taste leads us to admire a dress or music or pictures of which the details are not in fact harmonious, and in grave matters we may fail to see the ugliness of sin or the beauty of self-sacrifice. But to develop good taste and true insight is hardly less important than to promote the logical habits of thought on which such taste and insight must in the end be based.

We have said that when we think our interest is in understanding the situation as it really is. We now see that this involves more than grasping the logical connection of the facts involved. To grasp these connections is an essential part of successful thinking, but it must lead us on to appreciate the situation as

¹ Compare A. N. Whitehead, *Science and the Modern World*, pp. 26 f.

an harmonious whole. When we succeed we have the sense of satisfaction with what is right in itself,¹ of which we spoke in a former chapter.¹ We all feel satisfaction when we discover the answer to a puzzling question, and when Bartlett's pupils were asked to suggest the meaning of symbolic signs and hit upon what seemed to them to be the right interpretation, they were, he tells us, pleased in the peculiar and unmistakable way which occurs when some presented material seems to be singularly in its right place but we do not know why it should seem to be so.²

One of the marks of good teaching is that the boys should have this sense of satisfaction when a lesson ends. For such satisfaction is not only valuable in itself, but strengthens their interest in right thinking. It is a remarkable fact that great scientific thinkers draw their inspiration not simply from a passionate desire to discover the actual facts as such, but even more from a deep sense of the harmonious beauty of the world which they explore. Thus Einstein tells us that cosmic religious feeling "is the strongest and noblest incitement to scientific research," and he gives as examples Kepler and Newton. "The scientific religious feeling," he goes on, "takes the shape of a rapturous amazement at the harmony of natural law, which reveals an intelligence of such superiority that, compared with it, all systematic thinking and acting of human beings is an utterly insignificant reflection."³ These are

¹ Chap. X, pp. 111 f.

² *Remembering*, p. 113.

³ *The World as I see it*. Trans. A. Harris, pp. 27 f.

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oughts to which only great minds can rise, but we can all in some small measure share this experience, and we ought to help our boys and girls to do so. So, in speaking of the study of mathematics, Bertrand Russell tells us that "it is very desirable, in instruction, not merely to persuade the student of the truth of important theorems, but to persuade him in the way which itself has, of all possible ways, the most beauty."¹

From this point of view a teacher's task is not only to help his boys to learn and discover facts, but to open their eyes to the harmonious order of the things they come to know. He can do this only by leading them to see with his help what he sees more clearly than they. His work is essentially like that of a painter or a thinker who opens the eyes of his generation to truths and beauties to which they would otherwise be blind. "What we come to see through our own eyes, by learning the lesson of poet and painter, we only come to see because we have first, as we say, learned from him to look through *his* eyes. If he had not seen first, and seen distinctly, we should not have learned to see at all."² This is how a boy should feel when he looks back on his school life.

¹ *Philosophical Essays*, p. 83.

² A. E. Taylor, *The Faith of a Moralist*, Vol. II, pp. 91 f.

CHAPTER XIII

DIFFERENT KINDS OF THINKING

WE always think on the general lines we have been considering, but the process varies in important respects according to the kind of interest that inspires us. If we think about something we are looking at, it takes the form of perceiving which has already been discussed. If we think about some past experience or its result, we speak of remembering or recalling the experience, because in such cases we consciously use our thought of something we already know to meet our present situation. Or we may think primarily of some situation which we neither see nor remember nor think of as real, but which we suppose to be possible either in the actual world or in some world distinct from the world of actual facts. In that case we use the kind of thinking called imagining, in one or other of its different forms. Again, we may not be content to take for granted the connections between the things about which we think, but may want to understand clearly what these connections are. We ask why does the sun look larger when it sets than in the middle of the day? Or, why is it my duty to do so and so? We then not only think, but reason, organising the situation according to principles definitely conceived and applied. Lastly, we may

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thoughts and insight which throw a new light upon can a chaotic situation, and feel that we have made a new discovery, new at any rate to ourselves. This kind of thinking, characteristic of inventors, scientific discoverers, poets and other original thinkers, we shall call constructive thinking.

In thus distinguishing different kinds of thinking, we are only bringing into the centre of the picture one or other aspect of all processes of thinking. We cannot think at all without making use of knowledge gained in the past, or without thinking of the situation not only as it is but also as it may become, or without grasping to some extent the connection between the details of the situation which we organise. Moreover, all successful thinking is in some measure constructive. At the same time, when we think on any particular occasion, the process assumes a special character as one or other of these aspects dominates our attitude.

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In the kind of thinking we call remembering, the right thought generally comes into our minds as part of the dispositional interest that is active. Sometimes, however, we have to try hard to remember. We search our memories by turning our mental eyes upon the thoughts arising in our minds and following out their connections. We know we are looking in the right direction and examine the ground more carefully, guided by any hopeful clues. In so far as we are successful, we revive the right thoughts in a form which fits them

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into the situation we are organising. Our vague idea of what we want to recall becomes definite and harmonious. Our interest is achieved and we feel satisfied.

We remember easily both things about which we have formed a habit of thinking and things which interested us very much when we first became acquainted with them. So we recall without difficulty things that we have learned by heart¹ and also striking experiences of any kind, especially events or occasions which appealed strongly to our feelings. For, as we have seen, our emotions are powerful elements in the interests we feel and tend permanently to modify our corresponding dispositional interests. For example, we remember easily and vividly occasions on which we felt great pleasure or, with some exceptions, on which we have been frightened or distressed. Sometimes, indeed, the thoughts of such occasions come into our minds on the slightest provocation, and we find ourselves going over the details of the event again and again in spite of any half-hearted effort to turn our thoughts to other things.

The exceptional cases are roughly of two kinds. A situation connected with severe nervous shock, such as that of Dr. Rivers' patient,² may be such a painful subject to recall that our minds, so to speak, refuse to make the thought of it active.¹ Such cases are abnormal, but the same kind of thing often takes place in our daily lives. { We cannot remember the name of a man whom we dislike or whom we connect with some disagreeable experience, because the

¹ See Chap. XIV, p. 201.

² See pp. 73 f.

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thought of it is disturbing. We think we want to remember the man's name, but at the same time shrink from doing so.¹ Freud and his followers have emphasised this reason for our inability to remember² and are inclined to attribute all cases of forgetting to our tendency to repress all painful experience. However this may be, it is not unreasonable to suppose that a boy may forget to bring his homework because he knows it will get him into trouble, and yet quite honestly say that he did not want to leave it behind.³ Or he may be quite unable to remember something he learned in a lesson with a master he disliked.

Very often, however, we remember things, not because they have specially impressed us, but because they are connected with something we felt to be important. A friend's address or telephone number may be of little interest in itself, but we may be able to recall it at will, because we said to ourselves, "We must remember that as we shall want to write to him or ring him up."

¹ Sir Percy Nunn gives some amusing examples of such forgetting, *Education*, pp. 55 f.

² See e.g. E. Jones, *Papers on Psycho-analysis*, 2nd ed., pp. 42 f., 117.

³ Perhaps such cases may be explained by supposing that when the boy had finished his homework he felt reluctant to show it up. His interest in it, therefore, did not fit in with his interest in going to school. Consequently, when he was getting ready for school the thought of his homework did not occur to him. If after doing his homework he had felt real alarm at what the master would say, the connection between homework and going to school would have been made and he would not have forgotten. Compare B. Edgell, *Mental Life*, p. 130.

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If, therefore, we want to help boys to learn in a way which makes them easy to recall, we can do so either by awakening their keen interest in it, or by making them realise their connection with something of which they realise the importance. "Efforts at training or improving our memories," says Dr. Edgell, "are at bottom either less for boys concentrating attention—gaining depth of impression—or lessons in forming or organising associations."¹ We may add that we shall be more likely to lead them to feel pleasure in learning, for things learned with pleasure or satisfaction are more easily recalled than things learned against the grain.

By thus helping boys to remember the most things we are not making a futile attempt to develop a mythical faculty of memory. The best practice will give them greater facility in applying their knowledge in particular fields. The more history a boy knows, the more associations with new facts he has, and the more easily and fully we cannot grasp the significance of each detail in a good deal which he appreciates the meaning and value of. The more easily, therefore, is he likely to learn in the first what he learns.

Experiments have shown that this method of instruction the way in which our memories are improved. Our idea of the we may grow able to remember one kind of the relations better, say one kind of poetry, or number of able to recall connected with a certain subject. The odds of proof, perceptible improvement in our memory in particular case.

¹ *Mental Life*, p. 130. Compare W. D. Howells, *Psychology*, Vol. I, pp. 667 f.

² See e.g. C. Spearman, *Abilities of Man*, Chap. I. The process is one of

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thoughts. Thus William James found that practice remembering *Paradise Lost* enabled him to learn that shrink more easily and remember it better, but it have not help him to learn and remember Victor remember's *Satyr*.¹

forgettally, it is worth noticing that when we recall a experience or something we have learned, we reason ever revive the thoughts we had before bring h as we then thought them. Bartlett's him intentions clearly showed that exact recall is he did exceptional and, he adds, usually quite be quite tant.² For when we remember something, in a lesson in order to deal with a present situation,

Very thoughts we recall become active as part of a because tual interest. They are therefore modified because tired by our immediate purpose, our attitude felt to be gs, and are adapted to our new needs. phone num revive thoughts as nearly as possible as we we may be before is, therefore, usually ineffective for ourselves, "e, and people who tend to recall things want to write they experienced or learned them are apt stupid.³ The social bore is an obvious

¹ Sir Percy Nudd we all know that only boys whose *Education*, pp. 55 weighs their intelligence put things

² See e.g. E. J. O'Connell examination answers exactly as they 117.

³ Perhaps such without stopping to consider whether the boy had finished. It is true that when we recall His interest in it, t or facts or things we have learned by to school. Consequ thought of his home *Psychology*, Vol. I, p. 667, where other examples homework he had felt the whole subject, C. Spearman, *Abilities of connection between been made and he was*, p. 204.

Mental Life, p. 130. , *Abilities of Man*, pp. 280 f.

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heart, we come very near exact repetition. In such cases, we think in accordance with a habit we have formed, and therefore do nearly thought and quite the same thing as we did before. This type of recall by the exercise of rote-memory obviously plays an essential part in our thinking, but it is because it supplies material which must be organised by our more constructive activity.

Without, therefore, undervaluing the importance of accurate rote-memory, we must endeavour especially to improve our boys' ability to reason intelligently, that is to recall what is needed to form that fits into the situation which we have confronts them. For this purpose it is the most exhort them to try hard to remember, for a haphazard effort to remember is apt to defeat its purpose. We must attend to the conditions under which the teacher experience or learn what they want to be fundamental is rightly learned can be easily and remembered.

IMAGINING

When we remember we draw the material from our experiences in the past, but when we imagine there is no limitation of the material in the first use. The only condition is that it must instruct the achieve our interest in organising or forming an idea of the satisfactory situation. If we are planning the relations we may think of golf or travel, a boy is able to recall seaside or a visit to relations. If we are using words of proof, a fairy story the field from which we are dealing with a particular case.

¹ On the difference between rote-memory see H. Bergson, *Matter and Memory*, Chap. I.

² See Bartlett, *op. cit.*, pp. 115 f.

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thought is practically unlimited. We think about things not as actual facts but as what might be, or things ought to be, under conditions which we ourselves lay down. Imagining is, therefore, the freest form of thinking, for it liberates us from our bondage to things as they are. Our minds stretch their wings and rise above the world of actual facts to breathe freer air.

Imaginative thinking thus gives us relief from the monotony of daily life. It may simply give us relaxation, as when we read a novel for amusement, but in its deeper forms it satisfies our need for the rhythmic alternation of two forms of activity, work and creative play.

Very often, and by saving us from too exclusive absorption in our work gives us the strength and freedom to be its master and not its slave. So Henry James felt that the schoolmaster Ionides lived in imagination, and by his great scenes of English History, and by his ability to inspire his boys with a sense of their own history, "history means for us to-day."¹

want to write something to realise more fully the value of thinking from this point of view. "To

¹ Sir Percy Nunn, "Introduction," says Whitehead, "with un-
Education, pp. 55. Work is a disastrous economic policy.

² See e.g. E. Jones, "The alternation of spasms of
117.

³ Perhaps such periods of pure relaxation. It is here that
the boy had finished ill-requited toil he turned
His interest in it, to ride with Picton and with Pack,
to school. Consequent on his grammars only burned
thought of his home the Afghan mountain-track.
homework he had felt the book his teaching sped,
connection between it on whom he taught the trace
been made and he with the deathless dead
Mental Life, p. 130. "faith in all the Island Race."

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literature and art should play an essential part in a healthily organised nation. Their services to the economic production would be second only to those of sleep or food. Art as a condition of healthy life is analogous to sunshine in the physical world."

While in imaginative thinking we feel that we are attaining "the great ends of Liberty and Power," the freedom of such thinking is not caprice but the appreciation of a really satisfactory or harmonious situation. When we think imaginatively we are for the time in a world which transcends the conditions of the actual world and yet has laws of its own. When the scientist has a vision of a theory which brings order into some wide field of knowledge, the most world in which he lives is one which can be completely understood, because the laws of the world are clearly seen to govern every event that happens. In a novel or a play the world of the human beings who exhibit their characters fully and do more interesting things than we cannot people whom with our imperfect vision of actual life. But the characters must be such that the men and women must act as such. In imaginative thinking is unobstructed - in the first seems to us to develop of itself according to its own laws. It is revealed to us rather than we have an idea of the So George Eliot said that in all her best work the relations was a "not herself" which took power to recall and she felt her own personality to be a part of the whole, a particular case.

¹ A. W. Whitehead, *Aims of Education*, p. 5 that the figure

² See Wordsworth's *Prelude*, Bk. XII.

³ J. W. Cross, *Life and Letters of George Eliot* he has gained
Compare S. Alexander, *Space, Time and Deity* process is one of

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thought because imaginative thinking frees us from remembrance of the limitations and weaknesses of the actual world, it helps us at times to see more clearly the partial meaning of that world. Some men and women have a gift for seeing the vital point of a forgotten situation which for their less imaginative experience is obscured by details that divert their attention from the crucial issue. All great thinkers and writers have shown this imaginative insight and so their writings have a wider vision than that of their contemporaries. Books like Plato's *Republic* and Shakespeare's *Utopia* are imaginative descriptions of social conditions in which certain fundamental laws are seen in

Very operation without the inconsistencies which because they are from clearly seeing them at work in the actual daily life. Such visions are necessarily felt to be true, they give us bird's-eye views of human life in which essential features stand out clearly, and we may be sure, therefore, been abiding sources of inspiration to ourselves. "The thesis of Shelley's *Defence of Poetry* is that those who invented the arts of life, lawgivers, religious geniuses, were all poets, that is

¹ Sir Percy Newhall. Wordsworth tells us how his imaginative thinking restored his power

² See e.g. E. J. Rieu, *How to Understand Both Nature and*

³ Perhaps such as Ruskin's *Modern Painters* explains the boy had finished, fundamental importance of imagination. His interest in it, therefore, in human life.

to school. Consequently boys and girls can be expected to rank thought of his home, imaginative thinkers, but they can homework he had felt, are think imaginatively, and it is connection between made and he wrote Bradley, *Oxford Lectures on Poetry*, pp. 151 f. *Mental Life*, p. 130. *Guide*, Bks. 12 and 13.

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natural for them to do so. We have seen that young children tend to live in worlds shaped by their imaginations, and in early adolescence imagination and thinking finds its full scope in the ideals characteristic of that age. Our schools were long in freeing themselves from eighteenth- and early nineteenth-century traditions which led them to treat imaginative boys thinking as at best a waste of time. Mr. Gradle, whose philosophy of education was only an exaggeration of the view held by many teachers up to comparatively recent times. "Now, what I want is Facts. I want these boys and girls nothing but facts. Facts are wanted in life." It is of schools taught on the principle that Bridges says:

the most
mathematics.

"The mud-fish may be happy and at home in his little pond,
But live Imagination, conscientious of its fundamental Ranketh oft with the dunces in such schools."

we cannot

Happily these sunless days are passing a good deal not always realise the vital importance of the fact that the imaginative thinking. Miss Margaret MacLisacoe has shown us how young children living in the first roundings which stunted their imagination instruct the new happiness which transformed the idea of the they came to her Deptford School, where the relations thinking was encouraged. Few of us are able to recall McMillan's genius and, fortunately, odds of proof, girls have less depressing homes, but a particular case.

¹ *The Testament of Beauty*, Bk. IV, ll. 712 that the figure
² *Education through the Imagination*, pub. G. that he has gained
 1923. process is one of

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though a girl who does not need the same kind of opportunities as those described with wise insight in her shrink.

have to
remember
forget

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imaginative thinking we begin by taking a reasonable view of the situation, and so long as the bring him fit in satisfactorily we may not care to inquire why they do so. Most of us can enjoy a he did without being able to explain why the various be quite in it combine to form an harmonious whole. in a lesson same way, most of our thinking takes the

Very often between the details of a situation more because they are granted, without making clear to ourselves because of the nature of these connections. We see a felt to be an engine pulling a train and do not stop to phone number it is able to do so. There are, however, we may be such we want to know why things happen, ourselves, the results will follow from their happening. want to write that is, to understand the relations between objects in an actual or possible situa-

¹ Sir Percy Nunn may be interested in grasping the working *Education*, pp. 557, or in following out the consequences of

² See e.g. E. J. 117. course of action. In such cases we do

³ Perhaps such in detail, but definitely try to reproduce the plan of the situation without in the boy had finished in our minds, with the connections His interest in it, the details clearly understood. We then thought of his home in a special way which we call reasoning.¹

homework he had felt the character of such thinking is illustrated connection between been made and he was Bradley, *How we Think*. For a detailed *Mental Life*, p. 130. *Guide*, Bks. 12 and 13 be made to books on logic.

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by a lesson in which the master asked the boys how farm gates had a slanting plank nailed across them. The boys had previously taken such a plank and granted, and one or two suggestions were made which were found not to fit the case. The teacher, however, came to see that the weight of the cross-piece strained the corners held by the hinges, and the boys cross-piece kept the gate in shape. The discipline, we advanced by two stages. First the boys grasped the general function of the cross-piece. Then they calculated mathematically the forces involved and so gained a more definite understanding of the structure of the gate. We have

This example illustrates the important principle that when we reason we do not simply make one inference to another, as if the inferences were little links in a chain, but make our idea of an entire situation more precise by noting the parts which define it by its various details.¹ We develop the idea as it is for us, by clearly apprehending the whole which it is organised. When a boy learns a good deal in geometry he is apt to regard it as a series of steps as rungs in a ladder by which he climbs to the Q.E.D. But in fact each step should in the first meaning of the figure more coherently instruct the mind so that at the end he looks at the circle of the idea of the figure through new eyes. Step by step, he understands the relations of a figure that means something definite to recall before he had only a vague idea of words of proof, involved. The steps are not rungs of a ladder, but are away when they have been used, by that the figure gets their importance from the whole, he has gained

¹ See B. Bosanquet, *Implication and the process* is one of

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though each step plays a permanently essential part.¹ He reminds us of the true interest of a demonstration," says Bertrand Russell, "is not, as traditional modes of teaching have suggested, concentrated wholly in the result. An argument which serves only to prove a conclusion is like a story subordinated to some experience which it is meant to teach."² Unfortunately, however, like some improving stories, it has not infrequently been guided by the mistaken assumption that the summarised conclusion is the one thing that the child must remember.

There are quite a few stages in the lesson above mentioned in a lesson to illustrate another point of practical importance.

Very often the stage involved genuine reasoning so far as it went because it did not get very far. The boys realised that there was a connection between the different parts of the lesson, but they did not clearly grasp the principles by which these connections can be explained and we may be sure. In the first stage their reasoning dealt with certain relations between individual facts, while they assumed a background of general principles.

In the second stage they carried their reasoning a step farther, but they still assumed a background of mathematical principles.

² See e.g. E. J. Lemmon, *Logic*, p. 117. In making, they assumed the truth of the principles of mechanics.

³ Perhaps such is the case. All our ordinary reasoning, the boy had finished, deals only with relations of facts. His interest in it, its basis or background is taken for granted. to school. Consequently

thought of his home-work. I. Bradley's description of the process of inference is a construction and the result an intuition, connection between two things is logical demonstration."—*Principles of Psychology*, p. 130. *ibid.*, p. 83.

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Where we draw the line between things reasoned out and things taken for granted depends upon our knowledge and our interest. A mechanic working on a machine need not go so far back as the engineer who designed it. In our teaching, however, it is often important for us to have clear ideas of the principles assumed in the train of reasoning we want our boys to carry out. In teaching history, for example, we ought to have a grasp of the principles by which historical evidence should be judged, and similarly in other subjects. Sir Percy Nunn has said with whimsical exaggeration that we cannot teach elementary mathematics properly unless we have mastered the *Principia Mathematica*, one of the most difficult books on the theory of mathematics. Teaching is sometimes superficial and provides little practice in serious reasoning because the teacher has never gained a comprehensive grasp of the fundamental principles of the subject.

From what has been said it is clear that we cannot reason about any subject unless we know a good deal about it. Suppose a boy wants to prove that the line bisecting the vertical angle of an isosceles triangle also bisects the base. He must in the first place know enough geometry to construct the figure. He must, that is, have a clear idea of the situation within which he has to show the relations between the parts. He must also be able to recall and test various principles, or methods of proof, which may or may not apply to this particular case. When he sees, and knows why he sees, that the figure consists of two congruent triangles, he has gained the insight he desired. The whole process is one of

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developing his knowledge of mathematics, not of making use of a hypothetical faculty of reasoning which can be improved in general and then applied to any subject. It is true that a lesson in mathematics ought to lead a boy to make some advance towards forming habits of exact observation, of concentrating his attention on the matter in hand, and more particularly of wanting to get to the bottom of things. The satisfaction he feels in reasoning will make him more inclined to reason on similar occasions, especially in connection with the same subject. But his advance in these directions lends no support to the assumption that reasoning in mathematics will directly increase his ability to reason in history or geography or even in chemistry. The distinguished head master who recently said that boys ought to learn either mathematics or Latin in order to be taught to reason, provided an example of the fact that an able man can reason effectively about matters with which he is well acquainted, and yet be guilty of gross errors when he reasons about subjects of which he does not know the underlying principles. It follows that we shall encourage our boys to reason, not by some form of mental gymnastics, but by giving them plenty of practice in reasoning about things of which they have adequate knowledge and about which they want to ascertain the truth.

The fields in which any of us can reason more than superficially are necessarily very limited. In most cases we have to take the principles we apply for granted, or accept them on the authority of others. But in spite of its narrow sphere, reasoning is a most valuable form of thinking. For by reasoning we

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definitely organise a situation as it is for us, on the lines of the real situation so far as we can understand it. Reasoning is, therefore, the foe of prejudice and irrational tradition and of blind obedience to authority. We have to look the facts in the face and follow where they lead us. Reasoning is also the test and remedy for vague and muddle-headed thinking. For when we reason we make clear the relations between things which we otherwise should see darkly or not at all. Reasoning is, therefore, essential to effective action, and is the chief instrument for the discovery of truth.¹ If a prefect is up against a difficulty, he must reason as well as imaginatively understand. If he wants to do original work in any subject, or to settle for himself some of the wide questions he now feels to be important, he can do so only if he reasons.

It cannot be said that our schools have altogether succeeded in sending out boys and girls with a keen desire to arrive at the truth about things by reasoning them out for themselves. But their partial failure has been the fault rather of the schools than of the boys and girls they taught. For all normal children naturally begin to reason at quite an early age. They constantly ask questions in order to clear up doubtful points and at any rate by the age of seven they can definitely reason,² though,

¹ See A. N. Whitehead's suggestive essay, *The Function of Reason*. "The function of reason," he tells us, "is to promote the art of life."

² See J. Piaget, *Judgment and Reasoning in the Child*; S. Isaacs, *Intellectual Growth in Young Children*, and *The Children we Teach*, pp. 138 f.; M. W. Curtis, *Child Psychology*, pp. 269 f., and especially *Report on the Primary School*, pp. 265 f.

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of course, only about matters in which they are interested and which they can understand. At first they reason by attending to the relations between concrete objects, not in the light of general principles definitely grasped. Thus, when a boy of three said, "This is a clean plate, not a dirty plate,"¹ he thought clearly only of the relation between two plates alike in other respects, but no general principle was involved. It is only later that a boy can reason, "It is wrong to tell a lie, therefore I must not say so and so." This difference between the kinds of reasoning of which younger and older boys are capable is sometimes forgotten both by teachers and parents. They assume that an argument from general principles which appeals to them will appeal equally to young minds. Hence, as Burt says, "the majority of appeals to reason which parents and teachers are so constantly making (e.g. in their ethical arguments) leave the child quite unaffected intellectually, or else provoke quibbles and sophistications of whose fallacy the child is unaware."² When, however, a boy approaches adolescence he reasons from general principles and, if he is encouraged to do so, will develop an interest in grasping the causes of things which will continue with him through life.

A boy's natural interest in reasoning can, however, be only too easily discouraged by muddled or dogmatic or illogical teaching which does not help him to see things in connection with each other and hampers his necessarily tentative efforts to

¹ S. and M. Kenwick, *The Child from Five to Ten*, p. 20.

² *Report on the Primary School*, p. 268.

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reason things out for himself. As Bridges drastically puts it :

“How should not childish effort, thus thwarted and teased

Recoil dishearten'd bruized and stupefied beneath
The roughshod inculcation of inculcated minds,
Case-harden'd by their own thoughtless iterations.”¹

A boy's natural desire to find out the facts about something simply in order to get at the truth may also be weakened by his teacher's assuming that truth is sought less for its own sake than for the sake of some extrinsic advantage or reward. Marks and examinations have much to answer for in this connection. Boys ought to reason either for some practical purpose to meet a particular situation, or for the sake of arriving at the truth about some interesting and important question, apart from any consideration of practical utility. Of these two types of reasoning, the latter is not less essential than the former, and the interest in truth for its own sake, characteristic of scientists and scholars and philosophers, is one which every school should encourage in its boys. We want men and women who can rise above the shortsighted concern with the immediate situation, characteristic of the so-called practical man. Only they can save us as a nation from the perils which beset us.² “The Greeks,” says Whitehead, “have bequeathed to us two figures, whose real or mythical lives conform to these two

¹ *Testament of Beauty*, Bk. IV, ll. 708 f.

² See Graham Wallas, *The Great Society*, pp. 15 f.

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notions " of reason in search of truth and of reason as narrowly practical. They are Plato and Ulysses. "The one shares Reason with the Gods, the other shares it with the foxes." . . . "Ulysses has no use for Plato, and the bones of his companions are strewn on many a reef and many an isle."¹

CONSTRUCTIVE THINKING

The last kind of thinking of which we shall speak is that in which imagination, reasoning and memory all play their parts in a process which enables us to see a situation in a new light. Generally we begin to think of a situation with an idea of its general plan in our minds. A scientist explains a new phenomenon on accepted principles. We consider a practical problem in the light of our experience of somewhat similar occasions. It is true that we have always to adapt our thinking to the special conditions of the problem. All thinking, as we have seen, is to some extent constructive. Sometimes, however, if our thinking is to be successful it must be constructive in a more comprehensive sense. We are faced by a situation of which we have no satisfactory plan. It may be a practical question to which there seems to be no answer, or some occurrence which cannot be explained on familiar lines. We then need some bright idea that will give us the point of view from which we can see the apparently chaotic situation as having after all an order of its own. In the light of this idea we can then organise the situation in greater detail.

¹ *The Function of Reason*, pp. 7 f.

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Thinking of this kind is called original or creative or constructive thinking. We see its results in the work of great original thinkers, but also on a less impressive scale in the lives of all men and women who have a knack of finding the way out of difficult situations and can readily adapt themselves to new conditions. In a humble form it inspires wit and humour and the incisive comments which shake us out of our ruts.

The value of constructive thinking is undoubted, but the difficulty is that we cannot think constructively simply by trying to do so. Indeed, anxious effort may make our thinking less constructive. On the other hand, the experience of original thinkers has thrown light upon the conditions under which constructive thinking is most likely to take place,¹ and suggests useful habits which we may lead our boys to form in order to improve their chances of thinking more constructively.

The general conditions of all effective thinking, keen interest, freedom from repressive anxiety, absence of fatigue and the like,² are particularly important, but assuming these conditions are fulfilled, what we want a boy to do is to give his mind every chance of supplying him with the idea he needs. For the essential feature of constructive thinking is a flash of insight, or a happy thought, which throws a new light on the whole position, a thought which cannot be directly evoked by our

¹ See esp. Graham Wallas, *The Art of Thought*. Compare C. Spearman, *Creative Mind*; E. le Roy, *La Pensée Intuitive*; E. Rignano, *Psychology of Reasoning*.

² We may include good ventilation and comfortable posture.

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will, but comes, as it were, like a gift from heaven. Most of us have experienced occasions on which some problem that troubled us became more or less suddenly clear, and the question is how we can encourage such illuminating thoughts.

Experience shows that if the problem is a complicated one, we must begin by recalling all we know about it, looking at it from every point of view, and if necessary reading about it and looking up references. In short, we must assemble the material and arrange it as best we can with the question to be answered in the background of our minds. This stage is primarily that of remembering in a wide sense. We make available the results of our own past experience and that of others. The idea we want may occur to us during the process, provided we are not too much absorbed in thinking about the details to welcome its emergence. But in really difficult cases it may not come, and then the right course is not to go on trying, becoming more and more weary and dispirited, but to give our minds a rest. If a boy cannot see how to work a rider in geometry, or cannot make out a difficult passage, or plan an essay he has to write, he had better, after a good try, put it out of his mind for the time being. For ideas vainly sought at one time often come unsought at another. A name we have tried hard to recall occurs to us later in the day. We may wake up at night with a bright idea which answers, or promises to answer, the question we had been fruitlessly pondering the day before. We must suppose that between the first stage of remembering and the second stage of imagining in which the

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situation is mentally visualised as an intelligible whole, there intervenes a period of Incubation¹ during which our minds go on working without our conscious control. During this period of incubation we may be doing other kinds of mental work, but most thinkers find bright thoughts come to them most often during or after an interval of relaxation. The distinguished physicist Helmholtz said that happy ideas never came to him when his mind was tired or when he was at his desk, but most readily "during the slow ascent of wooded hills on a sunny day."² During the war an able scientist was trying to find an urgently needed safeguard against a certain form of poison gas. His strenuous efforts were unavailing, but the solution of the problem came to him when he was resting in his drawing-room listening to some music.

The imaginative act itself may take the form of a sudden flash of insight, or we may have a preliminary feeling that we shall be successful. "Vague premonitions," says F. M. McMurry, "furnish the clue to much of the best thought," but "they need to be encouraged and coaxed," and "very often one of the chief differences between a thinker and one who cannot think lies in the attention given to premonitory feelings."³

The idea when it comes gives us the general pattern of the situation, and very often it is a pattern with which we are familiar in another

¹ Graham Wallas, *op. cit.*, pp. 86 f.

² E. Rignano, *op. cit.*, p. 267.

³ *How to Study*, p. 278.

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connection.¹ So, according to the story, Newton understood the motion of the moon round the earth when he saw that it was identical in principle with the fall of an apple to the ground.

After this imaginative stage, which Wallas calls Illumination, must follow a stage of strict reasoning in which the bright idea is tested and worked out in detail. This stage of Verification is essential, for not all our happy ideas are sound, and in any case they give us only a general plan of the situation which must be developed by strict reasoning.

The stages we have distinguished may mingle with each other, and the whole process of constructive thinking takes rather different courses with different thinkers. But our summary account serves to show that a boy can control and stimulate his own thinking only within limits. He can take pains and reason, but he cannot force himself to have bright ideas. If he is industrious and yet seems more stupid than he ought to be, we ought not to blame him without asking whether the conditions of constructive thinking are in his case fulfilled. Is he over-anxious, or so bent on absorbing information from books and teachers that he distrusts his own thinking and so does not give his mind a chance? In particular cases we may ask whether by our teaching we encourage him to form the habits conducive to efficient thinking. Do we stimulate initiative in thinking as well as in doing? and do we welcome bright ideas even if they have to be amended? The atmosphere of some teaching re-

¹ See C. Spearman, *op. cit.*, pp. 22 f., and Chap. VIII; W. McDougall, *Outlines of Psychology*, pp. 389 f.

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garded as efficient is singularly unfavourable to constructive thinking, whereas there are teachers whose methods would be the despair of pedants and who are yet astonishingly successful in leading their boys to think. The secret is that they are themselves constructive thinkers and such thinking is contagious.

CHAPTER XIV

DOING

WE have now to consider the third way in which a boy's interest in a situation leads him to be active. He not only feels and thinks but does something to increase, or at any rate maintain, the situation's value. He responds to the situation by becoming part of it and himself influencing its course, making himself felt as an active living agent. He thus responds with some measure of initiative and independence, not like sealing-wax receiving an impression nor like a machine that works mechanically when power is applied.

When a boy responds to a situation he is always to some extent active in this way, and may, therefore, be said to *do* something. He does something when he breathes, or feels pleasure, or thinks about nothing in particular, or acts merely from habit. But when he feels a definite interest and is active in achieving it, his doing involves more initiative and is in a more intimate sense his own. It is the kind of doing of which we speak when after considering some situation we say that we must do something about it. We call this type of doing voluntary action because in varying degrees we will what we do.

It is misleading to say that what we do is more important than what we feel or think, because our

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feelings and thoughts and actions are mutually interdependent. Nevertheless our thoughts and feelings culminate in what we do, and we live most fully when we are acting voluntarily and by our actions play our parts in the world. For this reason we value character¹ more than intellect and hold the training of character to be the primary purpose of education.

As a simple example of doing in this full sense we may take the case of a boy making a stroke at cricket. He feels a strong interest in hitting the ball effectively and this interest inspires all he does. But the actual stroke is a climax for which he must prepare, and his interest leads him in the first place to attend to the ball's flight. In so attending he does two things. First, he tries to get a clear idea of the position and therefore of what he wants to do, and secondly he concentrates all his powers in readiness to act. He not only watches the ball but prepares to hit it.² His attention to the ball thus involves being active in the way demanded by the situation as he grasps it. He alters his stance and lifts his bat. He acts, we may say, as a living organ of the situation, becoming for the moment a batsman pure and simple with all his powers alert to act as the situation demands.

If he is an accomplished cricketer and the ball is

¹ On the meaning of character, see below, p. 175.

² This second element in attention is often overlooked. A teacher who tells his boys to attend, generally means: Listen to what I am saying. He does not realise that, assuming the boys in fact attend, they are strung up to do something, and if there is nothing obvious for them to do they have a feeling of frustration.

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one which clearly ought to be played in a certain way, this preliminary process is a straightforward one. The situation and its demands are clear and the boy knows exactly what he has to do. He has a sense of freedom just because all his energies work together without conflict or hesitation to do what the situation requires. He cannot do otherwise than play the stroke he does. He is bound to play it, not under compulsion from outside, but in virtue of his absorption in the situation.

Suppose, however, that he is only learning to bat, or that the ball is a puzzling one. He may then be in two minds how to play it. Is he to block it or try to hit? The situation is not clear to him, and he has to organise it by making a choice before he is really free to act. His choice is his own response to the situation, not dictated from outside. It is, therefore, a free choice, but until it is made, he feels doubt and hesitation, and so cannot act freely in the full sense. Freedom of choice is a condition but not the essence of voluntary action.

So far we have been describing the boy's preparation for making the stroke, but his whole course of activity culminates in his actually hitting the ball. This is his defiant deed in which he asserts himself against the world. In making the stroke, the boy feels what it is to be freely active. If he attempted to describe his experience he would say: "I myself will this stroke, and I can and will and do make it."¹ This experience is characteristic of a voluntary act.

¹ See for the experimental investigation of this experience, N. Ach, *Willensakt und Temperament*, and compare W. Stern, *Allgemeine Psychologie*, pp. 577 f.

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It implies a sense of power which is most fully felt when the minimum of conscious effort is required. If the boy times his stroke precisely and hits the ball exactly at the right spot on his bat, he may hit a boundary with comparative ease. If he has to summon up all his strength instead of letting his bat do the work, his sense of mastery is less complete.

We must notice that the boy's sense of being freely and victoriously active comes to him because he is a living member of the situation. Unless the ball had travelled as he expected and unless his bat had played its part, his act would have been nullified. We may say in a sense that his act was free and voluntary just because he did not act in his own strength as a separate individual but in the strength given him by his world.

It is true that the boy may fail to make the stroke he wills. He may misjudge the ball or lack the skill to play it. This only shows that we cannot mobilise for an act of will powers which we do not possess. As a matter of fact, we do not always concentrate all the powers we have and so will with our whole heart, but even if we do so our powers may be inadequate. At the moment, however, we are concerned with the experience of doing, and not with the success or failure of what we do. For it is by actually doing things and feeling what it is like to do them that a boy develops his power to will and learns to make the most effective use of the skill and knowledge he possesses.

If the boy plays the ball as he intended, he feels satisfaction with the result and pleasure in making the stroke itself. This experience accompanies all

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successful voluntary activity. Pleasure we have taken to be the sense of successful unimpeded activity, and when a boy is freely active in body and mind he experiences this feeling in its most definite form. There are three perfect sensations, it has been said: those of making a hit for six at cricket, a two-hundred-yard drive at golf and an unplayable smash at tennis. But this kind of pleasurable experience is not confined to games. The artist's or craftsman's pleasure in his work, the thinker's enjoyment of new ideas, and our gratification in having done somebody a good turn are all forms of the same experience. One effect of this pleasure in successful activity is that we instinctively tend to do things in the most pleasurable way, that is harmoniously and economically. We enjoy smooth rhythmic movements of our bodies and minds and try to avoid unnecessary expenditure of effort. The rhythmic movements of dancing are delightful in themselves, and we shall see that even learning by heart becomes less laborious when the process is given a certain rhythm.¹ If the boy batted in good style his movements were so rhythmical that they produced the greatest effect with the least expenditure of effort.²

But while the pleasure of successful activity is a valuable stimulus, we are inspired even more by the satisfaction which comes from our sense of the value of the situation we have helped to create. In voluntary activity of any kind we may feel this

¹ See Chap. XIV, pp. 201 f.

² On style, see A. N. Whitehead, *Aims of Education*, p. 19. Compare J. Middleton Murray, *The Problem of Style*.

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satisfaction even if our efforts have not been successful in their immediate aim. If we do what the situation demands to the best of our ability we may leave the issue to the gods, so long as we do not excuse ourselves for a failure due to our own fault. So if the boy who was batting ran himself out to save the other boy's wicket he might well feel satisfaction even though his hopes of a big score were disappointed. There is more satisfaction in losing a good game than in winning a bad one.

When a boy is voluntarily active and feels satisfaction with what he does, he tends to form a habit of doing the same kind of things again with more initiative and effect. He thus develops his character. For his character is his permanent self regarded as a doer rather than as one who thinks or feels. We judge a boy's character primarily by his actions as the outward expression of the structure of his mind. We shall, therefore, train his character most directly by leading him to practise doing things resolutely and freely. Such practice will tend to increase his strength of character, that is his power of effective action, in the first place in particular fields, and secondly to some extent in all he does.

It follows from our description of a voluntary act that a boy cannot be freely active unless he takes for granted that he will succeed in achieving his purpose, or at any rate in doing something of real value in that particular situation. If he feels any doubt, even more if he feels hopeless, his mind is divided and his energies lamed. A team that expects to be beaten loses the match before it is played. The real remedy for lack of courage is to absorb ourselves

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in the situation and so forget ourselves and our misgivings. If a boy is inclined to think he cannot do sums, give him such an interesting sum to do that he never asks himself whether it will come out. Ideas will come to him as he proceeds and he will be surprised at his own success. Only he must not expect working the sum to be a simple, straightforward matter. For a complex process of voluntary activity, such as doing a long sum, involves many subsidiary processes, and it is often not possible at the beginning to see clearly the course to be followed. It is enough to know the general aim and to see one step to be taken. As we advance step by step our idea of the whole grows more definite. Thought and action support and illuminate each other.

We cannot, however, always make a boy forget himself, and good courage is so essential to effective action that it is worth while to take more indirect measures to develop it, especially in the case of boys who are inclined to be nervous or to distrust their powers. Some teachers have the gift of inspiring boys to will and to accomplish what with other teachers they would never attempt. Following the example of such teachers, we shall lead our boys to think of positive things to be done rather than of negative things to be avoided. Our instructions will take the form of: Do this important thing, rather than: Mind you don't do that. In the same way praise has been proved by experiment to be more effective than reproof.¹ Further, we shall remember that young boys live vividly in actual situations and are less able than older people to stand

¹ See Murphy, *Experimental Social Psychology*, pp. 452 f.

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up against misfortunes. They are elated by success and acutely distressed by failure. There is much wisdom in Dr. James Ward's advice to teachers: "Never allow your pupils to suffer serious defeat, if only because such defeat demoralises."¹ Lastly, we can encourage boys to try to achieve some attractive feats in a spirit of adventure. Whether they succeed or fail is then recognised as being of secondary moment, and they experience the joy of effort in its purest form. On the other hand, boys apt to over-estimate their power will be taught their limitations more effectively by being left free to try and fail than by anything we can say.

But in order to do things with resolute initiative, a boy must not only have confidence in his powers. He must also have the sense of freedom which comes from feeling that his act is his own and not dictated from outside. Some freedom of choice is usually essential, because the thing to be done is not immediately obvious, and the boy must organise the situation before he identifies himself with it. If you tell a boy exactly what he is or is not to do he thinks of your instructions and not of the thing to be done. But the essential point is that the task before him should evoke his keen interest and call forth all his energies. He will then identify himself with the situation and, like the boy batting, act ely in response to its demands. Merely to leave to choose his own course with nothing exciting to do may please him for the moment but is apt to lead to boredom. A girl who went to a school in which freedom was identified with liberty of choice

¹ *Psychology Applied to Education*, p. 148.

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complained to her mother : " Oh, I am so tired of doing what I like." ¹

Effective willing and doing further involve, as we have seen, the concentration of our energies upon the achievement of our aim. But we can concentrate all our relevant powers only if our minds are so far organised that our chief dispositional interests form a coherent system and so support each other. Voluntary action in the full sense is therefore beyond the power of children and young boys. At the same time even children and young boys can practise concentration, and we should do all we can to help them so to do. One obvious measure we can take is to give them short periods of intensive activity in work or play, rather than long periods in which their zeal naturally grows cold. But the most important point is to encourage them to do things which appeal strongly to their main interests and not merely to some superficial motive. If a lesson seems to the boys to be only remotely concerned with things that really matter, their contributions are likely to be commonplace because they are not active with their whole minds. If, however, they vividly realise the bearing of the lesson upon things in which they are deeply and permanently interested, they will make a great variety of original suggestions. These suggestions may be off the point, but at any rate they show that the boys' interest in the lesson has awakened a wide range of other interests and that they are concentrating all the forces at their command for the achievement of their purpose.

Boys most clearly practise voluntary action when

¹ Compare Wordsworth's *Ode to Duty*.

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they make changes in the outer world by doing or making actual things, and one of the advantages of corporate life and games and of practical work in school is that they give opportunities for this more obvious kind of doing. But we can also voluntarily make changes in ourselves. We can determine to understand a difficult question or to overcome some failing. This kind of doing becomes increasingly important as a boy grows older and should be definitely encouraged by school lessons. "School children," says Graham Wallas, "should learn to recognise and undertake the conscious effort by which thought is made efficient, and to distinguish it, both from the automatic activity of recreative thought, and from the effortless interest stimulated in the members of a class by a skilled and "magnetic" teacher. Children can learn that distinction at a very early age."¹

If we really want our boys to think for themselves we shall, like Socrates, think of teaching as a means of bringing ideas to birth rather than as a process of instruction. Our attitude will be equally removed from that of the teachers who try to get something into their boys and of those who try to get something out of them. We shall aim at so arranging the work that the boys have something so interesting to think about and do that they absorb themselves in it like the cricketer in playing the ball. The boys will then be freely active on the lines we have described. We shall, if necessary, help them to keep their eyes on the ball and to see what the situation demands, but the motive force of the lesson will come from

¹ *Our Social Heritage*, p. 46. See the whole passage.

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them rather than from us. This view of teaching is easier to state than to carry out in practice. It is an ideal which can be fully realised only under favourable conditions, but it ought to determine the atmosphere and spirit of our teaching and is, in fact, exemplified in many class-rooms both for young and older boys.

So far we have been considering the development of a boy's character as the growth of his power to do things on his own initiative and with some measure of independence. But we want him to be not only resolute, but resolute in doing the right things. His character should be good as well as strong. By a good character we generally mean one that is virtuous or morally good. A boy is said to have a good character when he does his duty and is brave and truthful and public-spirited. It is, however, neither easy nor desirable to draw a hard and fast line between moral goodness and goodness that is not definitely connected with morality.¹ Is it or is it not part of a good character to be active as a scientist or an artist, or to see and laugh at jokes? If we insist too rigidly on our boys being good in a strictly moral sense to the exclusion of other excellent qualities, we are in danger of training them to be either prigs or rebels against conventional morality. In a broad sense a boy's character is good in so far as he habitually responds in thought and feeling and action to the true value of a situation, whether

¹ Compare R. L. Nettleship, *Philosophical Lectures and Remains*, p. 106: "I am coming to believe more and more that it is only a question of organisation where a man draws a line between moral and non-moral."

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that value is directly moral or not. At the same time we all know that it is more important for a boy to tell the truth or to be unselfish than for him to have keen intellectual interests or to be good at games. For the situations which matter most are situations involving human beings and their actions, and such situations have in the end a moral background and demand action which is morally right. The simplest game may be played in a chivalrous spirit or the reverse, and honesty and courtesy are fundamentally important in all our dealings with our neighbours. When, therefore, a boy in some voluntary act identifies himself with a situation involving other people, he acts rightly only if he responds to its moral demands. Further, he is himself a person "endowed with the task to live," that is with the task of changing things for the better, including his own self. And making himself better means not only growing wiser and more appreciative, but above all better in a moral sense.¹

It does not follow that a boy should always be thinking about the rightness or wrongness of what he does. It is only in difficult cases that he will have to ask: Am I doing right? If he thinks too much about the goodness of his conduct he will tend to live apart from and not in the situation. He will think first of himself and his own righteousness, and

¹ Compare B. Bosanquet, *Principle of Individuality and Value*, p. 347: "A man is good in as far as his being is unified at all in any sphere of wisdom or activity," and "what is called morality *par excellence* is constituted by the main structural outline of the intelligence, a defect in which cannot be wholly compensated . . . by the most complete aptitude and control in specialised provinces of experience."

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only secondarily of the situation. He will, in short, be a prig. As Edward Bowen of Harrow said, we should not think much of a cricket captain who should say: "Go to, I will now exercise a moral influence over my team." Normally a boy will feel that the right thing must be done simply because the situation is what it is. "In ordinary life," says T. H. Muirhead, "it is true of goodness as of pleasure that it is best got by forgetting it."¹

Nevertheless, there are times when a boy must think of what it is right to do and gird up his loins to do it. Just as he may have to weigh alternatives before he decides upon any voluntary action and definitely wills to do it, so he may not be good or wise enough to give himself wholeheartedly without doubt or hesitation to doing the right things. But we shall help him to face such critical occasions less by exhorting him to be always watching his own footsteps than by opening his eyes to the importance of the right things claiming to be done. We shall not talk too much about the moral duty of always telling the truth, but we shall try to make him feel in particular cases how great a thing it is to tell the truth and suffer for it, and how mean it is to lie. A head mistress stopped an epidemic of stealing other girls' lunches by representing how unfair it was for Mary Jones to have no lunch. General discourses on honesty had had no effect.

As a rule we shall try to make the right thing to be done so obvious that boys do it almost as a matter of course. For while moral training may profitably include occasional instruction and advice, it is given

¹ *Rule and End in Morals*, p. 111.

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in the main by the influences to which a boy responds in the normal course of his daily life. These influences may be roughly summarised as those of individual persons, of laws and institutions, and of the intrinsic goodness and beauty of things. Each type of influence is specially important during one stage of the boy's mental growth, but the three types always tend to be combined, and a boy responds to them all from his childhood to his manhood.

In his early years personal influences play a more prominent part than either of the other kinds. A child living in the immediate situation cannot look below the surface and see the deeper issues it involves. He depends upon the situation itself to make evident, or tell him in so many words, what it is right to do. If the centre of the situation is his father or mother, to act rightly is to do as they do, or to do as they tell him.¹ As he grows older the moral value of a situation reveals itself in other ways, but the importance of this direct form of revelation continues throughout his life.

In the next stage of growth the boy often feels bound to do the right thing in order that he may make the situation what it ought to be. But for his idea of what it ought to be, he depends a good deal upon the principles of right action accepted and enforced by the society of which he is a member. Moreover, he looks at his world mainly from outside and so thinks of actions and their effects rather than of the motives that inspired them. The revelation of the rightness of an action, therefore, comes to him mainly by his seeing that if he does so and so

¹ Compare R. A. Bridges, *Testament of Beauty*, Bk. IV, ll. 623 f.

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he will bring the situation into conformity with an accepted rule. He must not tell tales of another boy because such a thing is not done at school. He has, therefore, reached the stage at which rules and traditions are specially important, and his moral character develops largely by his accepting the ideal of right living of which they are the outward embodiment and framework.

The influence of his social world and its standards will remain with him through life. We all of us owe much to the fixed ground-plan of right living which laws and rules provide and within limits compel us to accept. But laws and rules provide the ground-plan only. They tend to deal with outward actions and to forbid rather than command. If we do what is right because it is the law we do not act entirely in response to the demands of the situation itself. We think of what the situation must be in order to conform to a standard brought in from outside. If a boy does what his master tells him because other boys do so or for fear of punishment, his obedience is a very different thing from whole-hearted eagerness to do what he feels to be tremendously important.¹

The essential value of laws and rules, traditions and institutions, is that they help and even compel us to realise the moral order of the world, not as an

¹ Compare W. Wallace, *Lectures and Essays*, p. 209: "True morality is not a thing of rules and observances. Far, indeed, should any man be from speaking scornfully of forms, traditions and bonds of social authority. Without them we should be poor and miserable creatures; through them is all progress. But they are not everything. . . . It is excellent to clean the outside of the cup and platter; but there is still the business of the inside."

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abstract theory but as embodied in the actual societies in which we live. Thus the order and discipline of the school make a boy realise by practical experience that as a member of the school he must do certain things and not do others. Moreover, the school's discipline and institutions provide a kind of ground-plan of the life which it helps its boys to lead. They save him from some of the mistakes he might be weak or foolish enough to make, and even more, they open his eyes to new possibilities of right living and give him fresh opportunities of doing the right thing. A prefect or cricket captain finds a wide field of activity open to him, and every boy should have a chance of doing something for the school.

For the ultimate purpose of school discipline, as of laws and rules of any kind, is not to make boys do what they are told because they are told to do it. It is to help them to feel for themselves the claims of right things to be done, and so to respond to what we have called the intrinsic goodness and beauty of things. In early adolescence boys see with special clearness the ideal value of things, and their most characteristic response is adolescent love. Love, indeed, is the most expressive word by which we can describe our attitude towards any person or object claiming our absolute allegiance as having intrinsic value. But we must use love in a wide sense to cover our response to all objects with which we identify ourselves because we feel them to be in some way good. In so far as we are inspired by love in this wide sense, we act not according to the rule and ordinance, but with the whole-hearted

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devotion to what is good and right, which is the essence of right voluntary action. "If citizens be friends," said Aristotle, "they have no need of justice" (that is of laws and regulations), "but though they be just, they need friendship or love also."¹

In this connection William Wallace recalls and annotates a story which sums up the chief conclusions of this chapter:

"When Michael Angelo's great vision of the last judgment was set open to view, a certain high official at the Papal Court complained that its nudities were indecencies, worthy of places unnameable rather than of the buildings in charge of the Vicar of Christ. Michael Angelo's first notice of the criticism, says the legend, was to give his critic a place amongst the evil shameless ones." But when the Pope echoed the complaint, "the order was forthwith given to Daniele da Volterra, to be known hereafter in art history as Il Braghettone, The Breeches Maker, to veil the offending members. Now breeches-making in this sense is a comparatively easy matter; and a great many people are of opinion that it is the most important of all matters. And its necessity to some extent is undoubted. Only the tailor must not be too proud. It is a nobler task to mould fine limbs, strong, graceful and active; and for that end tailoring, otherwise commendable, sometimes stands in the way. . . . And so, let us not forget—we all do forget—that the art of morality

¹ *Eth. Nic.* VIII, i, 4, quoted by J. H. Muirhead, *Rule and End in Morals*, p. 113, who adds: "And what is true of civic right is true *mutatis mutandis* of moral right."

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is not, how *not* to do it. Its function is not merely to keep us from falling, nor is it to help us to become proper. It is to teach us to love God with all our hearts and strength and mind, and our neighbours as ourselves.”¹

¹ *Lectures and Essays*, p. 209.

CHAPTER XV

SOME WAYS OF LEARNING

TAKING learning in the widest sense, a boy learns whenever he achieves an interest; for his activity modifies the dispositional interest which inspires him and to some extent the whole structure of his mind. In this chapter, however, we shall speak of learning in the narrower sense in which a boy is said to learn at school. He there learns when he achieves an interest not merely for the sake of doing so, but also in order to increase his permanent skill or knowledge. He learns when he does sums in order to increase his skill in doing arithmetic.

It is important to be clear about the benefit which learning on right lines confers. Learning is not valuable merely because it enables us to accumulate information. Of scholars who are walking encyclopædias in their subjects it has been said that a merely learned man is the most useless creature on God's earth. Real learning means increasing our power of doing things, that is of understanding and appreciating situations and changing them for the better. A boy who learns history on the right lines does not learn it merely in order that he may know the date of Waterloo, but in order to be able to think about important

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historical events, grasp the historical causes of social and political movements, and understand and sympathise with people of other climes and lands. He learns history, it has been paradoxically said, in order to forget it. The details which helped to develop his interest may fade from his memory when their work is done, but the interest in the historical aspect of his world will remain as a permanent possession. On the other hand, the boy who memorises historical facts in relative isolation from each other will do little to develop a living interest in what history really means. Indeed, such an interest is likely to be perverted or stunted by his unintelligent learning.

We think of learning as a means of developing power when we encourage a boy to learn in order to increase his skill. We should all say that a boy learns drawing in order that he may draw better, or goes to net practice in order that he may become a more efficient batsman. But in the case of intellectual learning we are apt to think of the result as a passive possession to be brought out when required from the cupboard of the mind, rather than as a greater power of dealing with certain classes of situations. Our schools are realising more and more that the purpose of learning is power and not information, but a full appreciation of this fact would lead us critically to review the matter as well as the methods of our teaching, and to carry farther the advance already made towards making our education more dynamic.

In order that a boy's learning may thus increase his power, he must feel and achieve an interest in

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what he learns. A lesson in class should be a process of achieving an interest shared both by the boys and their teacher, and must, therefore, follow the general lines on which all interests are achieved. It must begin with an idea of something worth accomplishing. It should advance by appropriate stages towards realising this idea, giving it definite shape either in something actually made or done, or in a grasp of the situation as an organised whole ; and it should end with the sense of satisfaction which follows the achievement of any interest. The success of a lesson will depend in great measure upon the keenness of the boys' interest in what they learn or in the learning of it. That effective learning is inspired by vivid interest has been more than once emphasised in previous chapters, and has also been repeatedly demonstrated by psychological experiments. For example, Professor W. H. Pyle tells us that, "In all the learning experiments performed in the author's laboratory it has been observed that those learners who carried on practice with the highest degree of concentration, other factors being equal, made the fastest progress."¹ Thus among a number of students learning to sort cards into boxes, "The fast learners gave themselves over completely to their work. For the time being, the world was to them a card-sorting world. . . . Their bodies were rigid and tense, and they whispered to themselves the numbers of the cards. With the slow or poor learners all was different. Their bodies were relaxed . . . they often gazed

¹ See W. H. Pyle, *The Psychology of Learning*, Revised ed., 1928, pp. 59 f.

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about the room, listened to various noises, and watched their associates in the laboratory."

We have also seen that a boy is keenly interested only in things which he feels play a real and important part in his world, and this point also has been substantiated by experiment. For example, one class in a school specialised for a time in making dove-tail joints, while a parallel class made boxes in which such joints were used. The second class made fewer joints than the first, but nevertheless made them better, because they appreciated the practical value of what they did.

Again, we have laid stress upon the importance of feelings and emotions as elements in our interests, and boys tend to learn effectively when their feelings are aroused. Sentimental lessons are beneath contempt, but where the boys can appreciate the real value of a situation only by feeling strongly about it, we must give them the opportunity of responding as the situation in fact demands. We have seen that even in mathematics a boy's enjoyment of the beauty of a figure or a proof makes his learning more effective. In history and geography there is the human interest which evokes such feelings as sympathy, admiration or indignation. Every subject, indeed, when properly taught makes its characteristic emotional appeal. As an example of the difference between teaching which encourages, and teaching which hinders the boys from responding to a situation by their feelings, we may take the case of two lessons in different schools dealing with the same subject. In both, the boys read the well-known passage in Euripides in which Alcestis before dying

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for her husband goes round her home bidding farewell to all the things she loved and would not see again. One class was mildly interested in translating the passage as so much Greek to be turned into passable English. The other class was unfeignedly moved by the pathos of the scene, and not only suggested some remarkable renderings but probably long remembered the lesson as a milestone in their study of Greek.

We have insisted upon the sense of the value and reality of things which boys gain by making or using things for themselves, and the same principle applies to the acquisition of new knowledge. The theory that you first learn something and then apply it, led to better methods of teaching than those which gave no heed at all to the application of what was learnt. But it did not go far enough. Learning and use should, if possible, be combined. At any rate, the boys should know the use of what they learn before they learn it. Professor Kilpatrick made one group of learners memorise a multiplication table, while another group used the table without first committing it to memory. He found that the second group learned the table more quickly than the first. He concludes from this and other experiments that "In many lines of teaching there has been a tremendous waste of time, energy and interest, in first memorising and then later practising the use of what has been learnt."¹

So far we have been speaking of the boy's interest in the matter of the lesson. In the case of young children it is this interest which must inspire their

¹ *Journal of Educational Psychology*, 1914, pp. 405 f.

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learning. They live mainly in the present, and do not concern themselves with the after-effects of what they do. These effects are the business of their teacher. Older boys can look ahead and ought to learn partly in order to increase their permanent skill and knowledge. Even if what they learn is not exciting at the moment, they should be ready to work hard in the confident expectation of reaping the reward of their labours at a later stage. While we ought to lighten their toil as far as possible by making it purposeful and intelligent, grind and drill play an essential part in the mastery of most subjects. It is therefore important that a boy's interest in learning should be sustained even if his task is dull or difficult, and since nothing succeeds like success, a boy is likely to learn more zealously and effectively if he learns in the right way. It is remarkable that more pains have not been taken in most schools to help boys to adopt the most economical and effective methods of learning. Even comparatively young boys can be started on the right lines, and older boys can be led to feel a keen interest in the elementary theory and practice of learning and ready to try experiments for themselves. We cannot here discuss in any detail the kind of instruction which might be helpful. Such instruction should obviously be closely connected with the actual learning the boys are doing.¹ Some general conclusions, however, follow from the way in which we have seen that interests are achieved.

¹ Useful suggestions will be found in P. Sandiford, *Educational Psychology*, p. 233; and H. J. Watt, *Economy and Training of the Memory*, esp. Chap. VII.

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In the first place, the boys should begin with as clear and comprehensive an idea as possible of what they are to learn. They ought, for instance, to know exactly what the lesson is about, what is its purpose, and how it bears on their main interest in the subject. If a boy has to learn a chapter in a book it is often a good plan to glance it through and so get a general idea of its contents. In the same way, if a boy has to do a sum, or carry out an experiment, he ought to make sure before he begins of what he is going to do.

In the second place, during the process of learning the boy must not simply accumulate details, but clearly grasp their connection with each other and their place in the whole. We all know that this relating of things is the secret of intelligent reading or listening, but it is also a mark of all good workmanship. A boy should draw each line in a picture, or make each part of a model, with the idea of the whole present in his mind.

Further, during the process of learning a boy will do well to check his progress at frequent intervals. We have seen that in carrying out a complicated purpose we often develop and modify our idea by comparing it with the facts,¹ and in any considerable piece of learning a boy should repeatedly recall what he has learned and then check it by reference to the book or in any other appropriate way. It was found that students who were learning short biographies remembered more than half as much again when they spent most of their learning time in trying to recall what they had learnt, prompting themselves

¹ Chap. XIV, p. 176.

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from the book when necessary, instead of devoting all their time to repeated reading.¹

The last stage in the process of learning is that of summing up what has been learnt as an intelligible whole. This may be done as the finale of the lesson, or if a boy has been learning from a book he will find it pay not to shut his book the moment he has finished reading, but to spend a few seconds in reviewing what he has learnt. In the same way, if he has done a sum, or made a drawing or a model, he should consider whether the answer to the sum is reasonable, or whether the drawing or model answers its purpose. Satisfaction with what he has learnt or done will, as we have seen, help him to remember it.

One stumbling-block in the path of earnest learners and teachers calls for passing notice. For a time boys may seem to be making very little headway or none at all. Such plateaux, as they are called, occur in the learning of most subjects. They may be due to the learner's keenness having become dull, or to the necessary ground-work not having been sufficiently mastered. But whatever their cause, they need not make the learners or their teachers necessarily lose heart. Sometimes a change of work or method of approach may help. Sometimes a short rest is the best cure, and sometimes there is simply a need for greater effort. On the other hand, if a boy says, "I shall never be able to do it," we must try to get him round the corner without his knowing it, or

¹ Sandiford, p. 244, quoted from A. I. Gates, *Psychology for Students of Education*.

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stimulate him to face his difficulties and overcome them.¹

The general description of learning which we have given covers a great variety of detailed processes. Every boy has, within limits, his own ways of learning, and it is a mistake to try to make all boys learn in exactly the same way. Psychologists have, however, distinguished three main methods of learning,² about which something must be said. A boy may learn by forming a habit, as when he learns something by heart, or he may learn by trial and error, as when he tries various ways of doing a sum, or he may learn by grasping the meaning of a situation, as when he understands the chapter of a book or sees the solution of a problem. Some psychologists have supposed that all learning tends to conform to one or other of these types. We shall, however, regard them as ways of learning which are usually combined, though any one of them may play the chief part in a particular process of learning. Each of them can be made more effective by the use of appropriate methods on which light has been thrown by psychological research. In particular, learning by the formation of habits has been extensively studied and some useful conclusions reached.

We learn by forming habits for the most part quite unconsciously in the course of daily life, and

¹ On plateaux in learning, see Godfrey Thomson, *Instinct, Intelligence and Character*, p. 254; Sandiford, pp. 213 f.

² A useful summary of different theories of learning is given by R. S. Woodworth, *Contemporary Schools of Psychology*. The three chief theories are based on experiments with animals. See esp. E. L. Thorndike's *Animal Intelligence*, and W. Köhler's *The Mentality of Apes*.

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it is interesting to see the different habits which boys have thus formed in different schools. Such habits are obviously important, but we shall here speak only of habits which a boy deliberately forms or which his teachers of set purpose lead him to acquire. The standard rules for developing habits which we desire to form are those quoted from Bain by William James.¹ We must launch ourselves with as strong and decided an initiative as possible ; never suffer an exception to occur till the new habit is securely rooted ; and seize every possible opportunity to act on every resolution we make, that is, practise the habit whenever we get a chance.

Among the habits that have been extensively studied by psychologists are those involved in bodily skill of any kind. An artist or skilled engineer or county cricketer does not owe his skill merely to the habits he has formed, but these habits are an essential part of his equipment. Even if we are not artists or engineers or cricketers, one of the ways in which we play our parts in the world is by making definite changes in our material surroundings by using skill based on habits. For example, we walk and speak, read and write. Unless we could do these and many other things without conscious effort we should lose all sense of freedom. Some degree of habitual skill is, therefore, not only practically useful but also necessary for our mental health. The question of how to help boys to form skilful habits is, therefore, one of educational importance, and is being actively considered by many schools.

Speaking generally, such habits are formed by

¹ *Principles of Psychology*, Vol. I, p. 123.

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practice. But practice is more than repetition ; it implies an end to be attained and an effort to attain it. Practice makes perfect because we discontinue unsuccessful ways of doing things or repeat with greater ease and efficiency those that are successful. In some cases we make progress by seeing the results of our attempts. In learning to draw a boy looks at the lines his pencil makes and judges how far they fit into a picture he has in mind. But when he forms the habits we are now considering, he tests the success of a movement not only by its obvious results, but also by the measure of satisfaction he feels in making the movement itself. So a golfer feels satisfaction in the feel of his swing as well as in seeing the flight of the ball. He is aware of the movements he is making by what are inaccurately called his muscular sensations, and if these sensations are satisfactory he feels that his movements are what they ought to be.

This perception of our own movements plays a twofold part in the process of acquiring skill. In the first place, our desire to improve the feel of the movement leads us to try to make the movement more satisfactory. If the movement is a routine one we therefore tend to form a habit of making it in the way which satisfies us. We may do this without looking at the movement from outside and without attending to it in detail. The improvement takes place we know not how or why. But for that reason we do not always realise its importance. The habits it enables us to form are the basis of all bodily skill and cannot be acquired in any other way. You may explain to boys in the greatest detail how they

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should draw or handle apparatus or dance or bat, but they will come to do these things easily and effectively only by forming a number of subsidiary habits as a result of actually experiencing the appropriate movements. Instruction may be necessary, both when the boys are forming habits and when they are using them in carrying out more complicated operations, but they must be given full opportunities of developing their movements by their own experience.

Unless they have this practical experience, your instructions will be wasted. For, in the second place, unless the boys know what a movement feels like they cannot make your injunctions part of their own experience. To understand in theory what they are to do is primarily an intellectual process essentially different from the experience of actually making the movement. Your words must therefore be translated into another language, the muscular language expressing the boys' experience of movements in the past. But the boys are familiar with this language of muscular experience partly because they have formed habits in the way we have described. It is no use telling a boy to play a full-pitched ball at cricket in a certain way unless he knows what it feels like to play it, and he can have this feeling only if he has formed habits which enable him to take for granted that he will, for example, hold his bat in the right way. Similarly, when a boy imitates what someone else has done he translates the movements he sees into his own muscular language.

The habits which a boy should form are those which make his movements accurate and swift but above all rhythmical and easy. The study of the

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movements made in industrial operations as well as in games show that ease and rhythm are the chief conditions of efficiency, and if they are secured, speed and accuracy will follow.¹ The handwriting of countless boys and girls has suffered from the desire to write fast rather than easily and smoothly, whereas boys who have not been hurried or made to write too much will, other things being equal, come in the end to write a flowing hand faster than those who have developed a crabbed style through their efforts after speed.

If a boy is to form a habit of making some movement or system of movements easily and rhythmically he must avoid, not only undue hurry, but also any useless or distracting motions. Absence of such movements is one characteristic of good style, and also in many cases a proof that the needful tools and materials are in the right position to be used. If a boy does not hold his pen or his bat rightly he will not move it economically. An inconvenient desk or laboratory will also interfere with the rhythm of his movements. Dr. Myers tells us of a factory in which a careful rearrangement of tools and apparatus increased the output by 266 per cent. Further, the boy should make his movements as rhythmical wholes rather than as a series of short angular motions. A long swing at golf is a good example. In learning a new movement, he may have to attend to special points, but the rhythm of the whole should never be forgotten, and we must not repeat the error exemplified in the old copy books which assumed that a boy learns to write a good hand by

¹ See C. S. Myers, *Mind and Work*, p. 18.

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making separate pothooks. In the same way, each movement in a complex whole should form part of a rhythmical pattern such as we see in dancing.

Another class of habits of special interest to teachers are those formed when boys learn things by heart, and psychologists have some helpful advice to give about economical ways of committing things to memory. When a boy learns by heart, for instance a poem or a foreign word, his aim is to form a habit of recalling it at will. He wants to be able to say the poem or the word to himself or other people. It is, therefore, this activity which he must practise, and as a matter of fact we find boys often saying to themselves the words they wish to remember. The practice will be more effective if the learner knows definitely that he will have to reproduce what he has learnt. In one experiment the results were about 50 per cent. better when a class had been told beforehand that they would later have to reproduce certain words copied from the blackboard, than when they had simply been told to copy and learn them, without anything being said about when they would be required.¹

Further, since we form habits of doing things only when we are satisfied with the way we do them, a boy should repeat to himself what he is learning in the most satisfactory way he can. In the first place, the repetition should be rhythmical. We have seen that every satisfactory activity tends to have its appropriate rhythm² and our activity in learning is no exception. When we learn things by heart

¹ W. H. Pyle, *Psychology of Learning*, p. 63.

² Ch. XIV, p. 174.

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we tend to make a tune or verse out of them. Even when people have practised learning a series of non-sense syllables, like *baf, jid, ren*, etc., they have been found to make a kind of rhythm of them. Poetry is so much easier to learn than prose largely because the rhythm is ready-made.

Secondly, a boy's activity in repeating something to himself will give him a full sense of satisfaction only if it is inspired by an interest in what he is learning, and if each time he repeats it he feels satisfaction in his mastery of it. He will therefore learn effectively only if he grasps what he learns as an intelligible whole. It follows that when a boy has a long poem to learn he ought to divide it up into parts which are themselves as far as possible complete wholes. A boy's tendency is to learn the first two or three lines of a poem, and then go on to the next two or three. For various reasons, this is uneconomical, but the main defect of this method of learning is that it involves learning comparatively meaningless parts and not intelligible wholes.

Sometimes a boy has to take special pains to make clear to himself the connections between the various items, or even invent connections in order to make what he learns a whole. *Memoria technica* may be usefully employed. A boy will easily remember the order of St. Paul's Minor Epistles if he notices that the chief vowels in their names come in the order a e i o. But whatever devices may be used, the important point is to learn details in some intelligible connection with each other. "All improvement in memory," says William James,¹ "consists in the

¹ *Principles of Psychology*, Vol. I, p. 667.

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improvement of one's habitual methods of recording facts," that is of incorporating them in a whole of knowledge. He tells us that actors whom he questioned denied that practice made their memories more retentive. "What it has done for them is to improve their power of studying a part systematically. Their mind is full of precedents in the way of intonation, emphasis, gesticulation; the new words awaken distinct suggestions and decisions; are caught up, in fact, into a pre-existing network. . . . Similarly, when schoolboys improve by practice in ease of learning by heart, the improvement will, I am sure, be always found to reside in the mode of study of the particular piece."

Learning by forming habits, and especially learning by heart, was long a method highly esteemed by schools. Its reign was threatened but not ended by the stress which came to be laid on direct instruction. Only in comparatively recent times has learning by trial and error been definitely recognised as not less important than learning by habit or instruction. In certain quarters it has been extolled by enthusiasts for heuristic methods as the most effective of all ways of learning. At any rate, it is clear that in ordinary life we learn a great many things by trying whether a certain movement or thought will answer its purpose, and if it does not, by experimenting with possible alternatives. A boy learning to swim on his back first makes a number of more or less random movements, but gradually discards those which fail to keep him up, till he has by trial discovered what he ought to do. Or again, a boy tries various ways of planning an essay to discover

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which is the most satisfactory before he begins to write it.

The advantage of this kind of learning is that it is the work of the boy himself acting on his own initiative, and that by it a boy is brought up against actual facts. It therefore encourages independence and a sense of reality. It is a process of adventure or personal exploration. What, however, its more extreme advocates sometimes forget is that it has its limits. Generally we must know the end to be attained and broadly the way to attain it, before we begin experimenting with detailed methods. It is no use giving a boy a test-tube with some unknown solution in it and telling him to set to work upon it, with no indication of what he is going to do; for instance, whether he is to test for its constituents or to find its specific gravity. Aimless and hopeless floundering is not learning. In order that learning by trial and error may be effective, the boy must have a strong interest in achieving some purpose which he understands; he must have the requisite skill and knowledge to make his experiments intelligent and reasonably likely to succeed, and within appropriate limits he must be free to choose his own procedure even if he makes mistakes.

Sometimes the main point in the process of learning is that the boy achieves a new grasp of the situation. He sees and understands something he did not know before. In such cases he is said to learn by insight. He learns in this way when he reads a poem with understanding and enjoyment, or comprehends the meaning of some scientific fact or historical event. Learning by insight is, therefore,

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an example of the process of organising a situation discussed in previous chapters. It is the most advanced form of learning and the suggestions made above about making learning efficient apply to it with special force. Apart from such general suggestions, we shall help our boys to learn by insight rather by example and inspiration than by recommending definite rules of learning. For learning by insight is a very personal process which takes many forms according to the character of the learner and the nature of the subject, but a teacher who himself learns by insight will lead his boys to do likewise.

It does not, however, follow that when a boy has understood some situation he will necessarily remember it accurately and clearly, or be able to apply what he has learnt. He may understand and appreciate a chapter in a history book and yet forget the important names and dates. He may grasp a new rule in algebra and yet be at sea when he comes to work sums by its aid. Learning by insight must therefore often be supplemented by other forms of learning. A boy may have to make a definite effort to commit important points to memory, or he may have to apply his new knowledge in order to see that it really works.

In the end all intelligent learning tends to involve the formation of habits, trying tentative experiments, and gaining fresh insight. For in learning a boy takes a hand in promoting his own mental growth and therefore tends to be active in the chief ways in which he grows in the course of his daily life. He grows mainly by being active in the three ways we have distinguished, and is deliberately active in these ways when he sets himself to learn.

CHAPTER XVI

CONCLUSION

WE began by assuming that boys and girls live and grow as members of a world from which they derive their life and strength, and our discussions have confirmed and illustrated this principle as it is brought home to us in daily life. Thus we have seen that the child learns to live by absorbing himself in his world or, as we put it, living his world from within. In the strength thus gained the boy knows his world more independently, including not merely things as they are but more particularly things as they ought to be, and he can, therefore, live and act as a free *living organ of the universal life*. The process of growth is not an easy one and is marred by manifold weaknesses and shortcomings, but by their very nature all boys and girls are bound to grow on these general lines, and the purpose of home and school education is to render the process more complete.

We traced the same principle at work in the structure and activities of the boy's mind. His permanent self is not his own creation, but given him by his world, and he lives as a member of his world by feeling that things matter, and that he himself can change them for the better. He lives, that is, by feeling and achieving interests. A boy knows that things matter partly because they stir his feelings, and while his personal pleasure or pain

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encourages or warns him when things go right or wrong, he has a deeper sense of satisfaction when he feels things are what they ought to be and that he is therefore at one with them. He can, however, be an effective member of his world only as he makes it part of his own life by reconstructing it for himself, and we saw how by thinking and knowing, remembering and imagining he organises the world as he sees it from his own point of view. He thus—partially and imperfectly—understands the world in which he lives and the part assigned to him in it. But both feeling and knowledge come to him because he is himself an active agent in his world, sharing its life and so experiencing what it is like to do and will, and he wills freely and acts rightly when he responds wholeheartedly to the claims of the wider life he shares.

The world in which a boy thus comes to live more fully is in the first instance his familiar world of persons and material things, of home and school, of work and play, and all his daily interests. But this world has an unseen background or foundation to which in the end it owes its deeper meaning and value. In the critical moments of his life the boy is aware of things which are absolutely important, and lives in the strength which comes to him from contact with them. Even as a child he was absorbed in the beauty of a flower more simply and directly than his more sophisticated elders, and Bridges tells us that—

“Not the Muse herself can tell of Goddess love;
Which cometh to the child from the Mother’s
embrace.”¹

¹ *The Testament of Beauty*, Bk. IV, l. 1314.

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"This direct contact with eternities," as Bridges calls it, continues, however intermittently, through boyhood and youth. For every normal boy or girl has at times glimpses of that—

"ultimat perfection : which, howe'er 'tis found
or strangely imagin'd, answereth to the need of
each
and pulleth him instinctively as to a final cause."¹

This ultimate perfection may be glimpsed in many forms. The beauty of a landscape or a picture or of music, some person who seems supremely lovable and good, some heroic action or ideal may inspire a boy with a sense of awe and greatness which is essentially religious. Such occasions are necessarily exceptional, but there need be nothing forced or abnormal about them. Mr. J. H. Skrine tells us of a school football match in which one side was weakened because it was more conscientious than the other about the players it included. "Then the match ! The hush on the field when ' the weakened ' team, in defiance of the odds, scored and again scored ! The supporters, in chaste awe at the marvel, could hardly shout : it was more like a sob : a judgment had so manifestly defended the right. . . . All came away quiet as a crowd from a cemetery. It was not a game of football we had looked on at : it was a Mystery Play : we had been edified, and we hid it in our hearts."²

It is "this direct contact with eternities," felt rather than understood, which inspires a boy in small

¹ *Op. cit.*, Bk. IV, ll. 1412 f.

² *Pastor Agnorum*, p. 77.

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things or in great to forget himself and do what no law could command. For right action then becomes "heroism, i.e. action which does not spring from the finite nature of man, but is the free and beautiful courage of a man to act as God instructed him, and not to fall short in action from what he has seen to be true."¹

A boy's natural power to see, as Wordsworth puts it, "into the life of things" can and ought to be developed by healthy religious teaching and observances. It is at least equally important that the influences of his home and school should make the attitude which culminates in this insight part of the habitual background of the boy's whole life. We should help him to live in each situation as reaching beyond the present, and extending in the end as far as the unseen world of which at times he feels the ultimate reality and claims. We shall only do violence to his deepest feelings if we parade morality or religion. Readers of *Stalky & Co.* will remember the lecturer who waved the flag with a blatant trumpeting of patriotism before boys in whose homes the most sacred relic was their father's sword. A boy's mind, as Edward Bowen said, is a shrine into which we may enter once a year with bowed head and shoeless feet.

More effective than any exhortations will be the influence of atmosphere and example. Plato has once for all described this true form of education. "Then will our youth dwell in a land of health, amid fair sights and sounds, and receive the good of

¹ Quoted from Schelling by W. Wallace, *Lectures and Essays*, p. 59.

everything ; and beauty, the effluence of fair works, shall flow into the eye and ear, like a health-giving breeze from a purer region, and insensibly draw the soul from earliest years into likeness and sympathy with the beauty of reason.”¹

Unfortunately this ideal is no easier to carry out in practice now than it was in Plato's time, and in spite of many advances we have made, the places in which our boys and girls grow up are not always lands of health in Plato's sense. The speed of modern life with its manifold interests in material things and personal success and the strain it imposes upon our bodies and our minds make it specially difficult to remember the unchanging background of our lives. Also we live so close together that our lives seem wholly governed by the social forces to which we are exposed.² These tendencies show themselves even in our homes and schools. Boys are sometimes led to think that their first duty is to get on, and examinations and school matches gain a magnified importance. Not a few parents and teachers as well as boys and girls suffer from nervous strain. A school may absorb all a boy's time and strength, and the one thing needful may seem to him to be conformity with the school's demands. Even in the home a boy or girl may feel cabined and confined. The remedy, as not a few parents and teachers show us, is to make the home or school a little world in which the unseen background is habitually assumed and in which life is therefore

¹ *Republic* 3, 401. Jowett's translation.

² See e.g. Graham Wallas, *The Great Society*, Chap. I ; and Rudyard Kipling's *Kipps*.

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peaceful, however active and exciting it may be. For true peace comes from activity and self-control and trust in the ultimate rightness of things in spite of sins and failures.¹

We shall therefore make our schools more and not less efficient, and may even help our boys to pass their examinations and win their matches, if we try to restore to the word *school* some of its early associations. For "in its Greek original" school "is release from the distraction of petty tasks, from the bondage of custom, the fragmentariness of practice, and the ascent into a freedom where we see things whole and true, where we are our own full selves, enjoying the full sense of accomplished yet progressive being. Thus school meant the leisure of free development and full self-realisation, the sense and enjoyment of life unimpaired," reserved "for those who have yet the world before them, and can rest awhile under the Interpreter's care, and in the House Beautiful, beholding all the wonder of the world that might be."²

¹ Compare A. N. Whitehead, *Adventures of Ideas*, Chap. XX.

² W. Wallace, *Lectures and Essays*, p. 126.

A SHORT LIST OF BOOKS

THE following books to which the foregoing chapters owe a good deal of their matter are suggested for further reading.

Books marked with an asterisk are comparatively difficult.

GENERAL

- ✓ T. P. NUNN : Education : Its Data and First Principles (Arnold, 2nd ed., 1930).
- A. N. WHITEHEAD : The Aims of Education (Williams & Norgate, 1929).
- W. JAMES : Talks to Teachers (Longmans).
- W. M. DOUGALL : The Energies of Men (Methuen, 1932).
- *W. STERN : Allgemeine Psychologie (Haag, 1935).
- *W. MITCHELL : Structure and Growth of the Mind (Macmillan, 1907).
- *R. S. WOODWORTH : Contemporary Schools of Psychology (Methuen, 1931).

PART I

- C. BÜHLER : From Birth to Maturity (Kegan Paul, 1935).
- C. BURT : The Young Delinquent (Univ. of London Press, 1925).
- *G. and L. B. MURPHY : Experimental Social Psychology (Harper, 1931).
- *C. BÜHLER : Kindheit und Jugend (Leipzig, 3rd ed., 1931).
- *H. WERNER : Entwicklungspsychologie (Leipzig, 2nd ed., 1933).

A SHORT LIST OF BOOKS

CHAPTER III

- Report of the Consultative Committee of the Board of Education on Nursery and Infant Schools (Stationery Office, 1933).
- S. ISAACS: *The Children we Teach* (Univ. of London Press, 1932).
- E. and M. KENWRICK: *The Child from Five to Ten* (Kegan Paul, 2nd ed., 1932).
- *J. PIAGET: *Language and Thought of the Child* (Kegan Paul, 1926).
- *Judgment and Reasoning of the Child* (Kegan Paul, 1928).
- *The Child's Conception of the World* (Kegan Paul, 1928).
- *S. ISAACS: *Intellectual Growth in Young Children* (Routledge).
- *Social Development in Young Children* (Routledge).

CHAPTER IV

- Report of the Consultative Committee on the Primary School (Stationery Office, 1931). (The appendices are of special interest.)
- P. H. FURFEY: *The Growing Boy* (Macmillan, 1930).

CHAPTER V

- G. STANLEY HALL: *Adolescence* (Appleton, 1904). (Rather out of date, but a mine of information.)
- W. McDUGALL: *Social Psychology* (Methuen).
- The Education of the Adolescent* (Stationery Office, 1926).
- Among accounts of Adolescence in general literature may be mentioned:
- MEREDITH: *The Ordeal of Richard Feverel*.
- WELLS: *Ann Veronica*.
- JOYCE: *The Portrait of the Artist as a Young Man*.

A SHORT LIST OF BOOKS

CHAPTER VI

- W. McDougall: Psychology (Home University Library).
J. DREVER: Psychology of Education (Arnold, 1922).
*W. H. R. RIVERS: Instinct and the Unconscious
(Cambridge, 1920).

CHAPTER VII

- Report on Differentiation of Curricula between the Sexes
(Stationery Office, 1923).
C. BURT: Mental and Scholastic Tests (King, 1922).
*C. SPEARMAN: Abilities of Man (Macmillan, 1927).

CHAPTER VIII

- W. McDougall: Social Psychology (Methuen).
GRAHAM WALLAS: The Great Society (Macmillan, 1914).
E. A. ROSS: Social Psychology (Macmillan, 1909).
*F. C. BARTLETT: Remembering (Cambridge, 1932).
*W. McDougall: The Group Mind (Cambridge, 1920).

CHAPTER IX

- *A. F. SHAND: The Foundations of Character (Macmillan,
1914).

CHAPTER X

- W. JAMES: Principles of Psychology, Vol. 1, Chap. IV.

CHAPTER XI

- *H. H. PRICE: Perception (Methuen, 1932).

CHAPTER XII

- J. DEWEY: How we Think (Heath, 1909).
*C. SPEARMAN: The Nature of Intelligence (Macmillan,
1923).

A SHORT LIST OF BOOKS

CHAPTER XIII

- W. J. WATT: The Economy and Training of the Memory (Arnold, 1909).
M. McMILLAN: Education through the Imagination (Allen & Unwin, 2nd ed., 1923).
GRAHAM WALLAS: The Art of Thought (Cape, 1926).

CHAPTER XV

- W. H. PYLE: The Psychology of Learning (Warwick & York, 2nd ed., 1928).
D. STARCH: Educational Psychology (Macmillan, 1924).
T. H. PEAR: Skill in Work and Play (Methuen, 1924).

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